SONY®

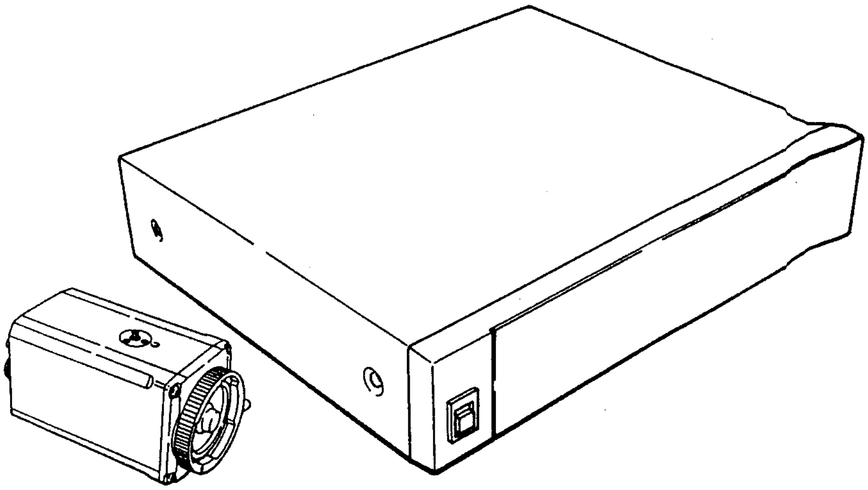
XYM351-10-

V03169

DIGITAL PHOTO CAMERA

DKC-5000

SERVICE MANUAL



WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS INDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COPMONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SECTION 1
GENERAL

This section is extracted from instruction manual.

1-1. SPECIFICATIONS

DKC-5000 (Camera)

Imaging element
1/2-inch, 440,000-pixel CCD
Effective image area
795 (H) x 598 (V) pixels
Pixel offset
Vertical and horizontal
Photography system
3-element
Lens mount
1/2" 38 bayonet mount
S/N ratio
56 dB or better
ISO speeds
LIVE mode: AUTO, 100, 200, 400, 800 (equivalent)
STILL mode: 100, 200, 400, 800 (equivalent)
White balance
AUTO (FLASH ON/OFF)
MANUAL (R, B GAIN, –127 to +127
Electronic shutter
LIVE mode: AUTO, 1/25, 1/50, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
STILL mode: 4", 2", 1," 1/2, 1/4, 1/8, 1/15, 1/25, 1/50, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
Gamma settings
UPD-7000, ON, OFF, USER1, USER2, USER3
Contrast
– 127 to +127
Input/output terminals
Camera connector: 20-pin
Analog RGB (diagonal color offset)

SYNC
2.0Vpp, 75 (unbalanced)
Lens connector: 6-pin
Remote control unit connector: 4-pin
Viewfinder connector: 8-pin DIN connector
Flash timing: X contact
(terminal voltage: 400V or less)
PC IN connector: Stereo mini-jack
TRIG connector: Stereo mini-jack

Power supply voltage
DC 12V
Current consumption
5.0W
Ambient operating temperature
5 to 35°C
Ambient storage temperature
– 20 to 60°C
External dimensions
70 x 72 x 123.5 mm
Mass
Approx 620 g

DKC-5000 (Digital Photo Camera System)

Input A/D

- Quantification table
  - 10-bits/color (R, G, B)
- LUT
  - Gamma - UP-D7000, ON, OFF, User 1/2/3
- Output LUT
  - All 8-bit (R, G, B)

Memory

- Image memory size
  - 738 (H) x 576 (V) x 3 (RGB) x 8 (bits)
- Standard memory capacity
  - 2 images
- Expansion memory capacity DKB-5008)
  - 8 images

External interface

- SCSI
  - SCSI-2 (unbalanced)
- Transfer method
  - Asynchronous transfer only
- Data bus width
  - 8bits
- Data format
  - RAM data
  - RGB pixel-sequential
- Image size
  - 1520 x 1144 x 3 (5.2 Mbytes)

(4) Input

- Color connector
  - 20-pin connector
    - Analog RGB (diagonal color offset)
      - 0.7VPP, 75 ohms (unbalanced)
    - Sync
      - 2.0VPP, 75 ohms (unbalanced)

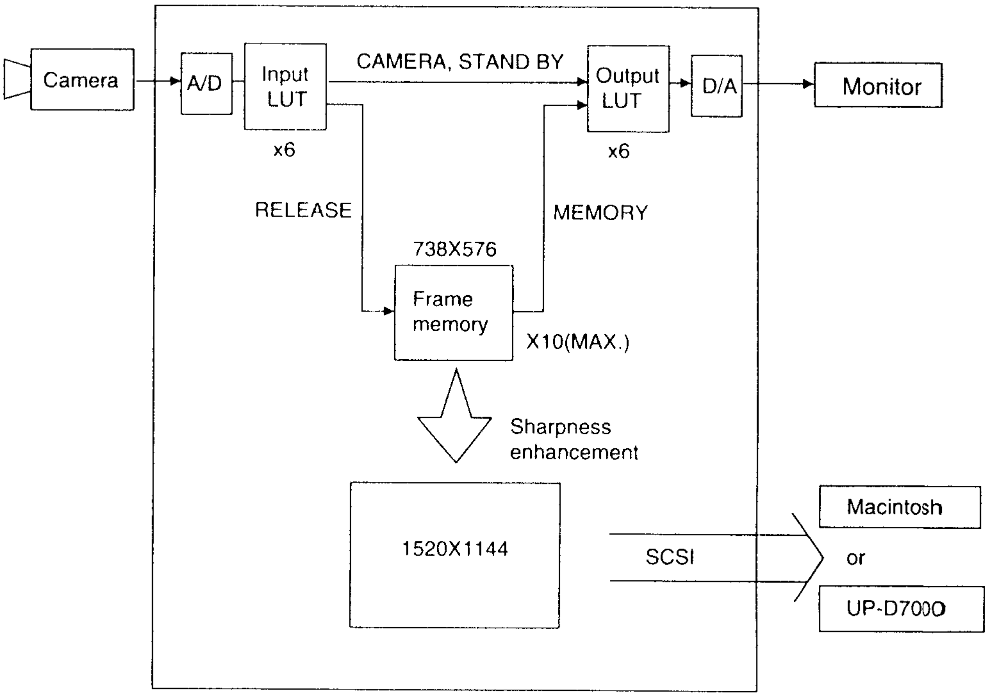
Output

- FLASH connector
  - X contact (terminal voltage: less than 400V)
- REMOTE 1
  - 12-pin multi-connector
- REMOTE 2
  - Mini-jack
- SCSI connector (SCSI loop-through)
  - Amphenol, 50-pin x 2
- REMOTE 3
  - D-sub 9-pin
- Analog RGB connectors
  - BNC
- Analog RGB BNC connectors
  - Analog RGB
    - 0.7V_{p-p}, 75 ohms (unbalanced)
  - Sync
    - 4V_{p-p}, 75 ohms (unbalanced)Other
    - Note: Pixel skew offset signal is output as-is.

Others

- Camera cable length compensation
  - 10 m/25 m
- Power supply voltage
  - 120V (50 Hz/60 Hz) ---- (USA/Canada)
  - 220-240V (50 Hz/60 Hz) ---- (Europe)
- Current consumption
  - 1.0A ---- (USA/Canada)
  - 0.7A ---- (Europe)
- External dimensions
  - 424 (W) x 356.5 (D) x 105.5 (H) mm
- Mass
  - 9 kg

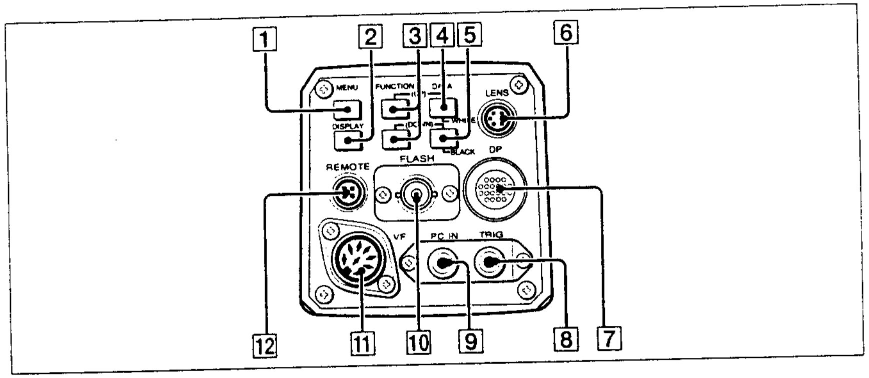
Digital processor block diagram


Camera
A/D
Input LUT
x6
CAMERA, STAND BY
Output LUT
x6
D/A
Monitor
RELEASE
MEMORY
738X576
Frame memory
X10(MAX.)
Sharpness enhancement
1520X1144
SCSI
Macintosh
or
UP-D7000

1-2. LOCATION AND FUNCTION OF PARTS AND CONTROLS

Camera

Rear panel



1 MENU button
This button turns menu display (and Set Up menu) on and off on both the monitor and the viewfinder.

- When no menu is displayed, pressing the MENU button displays the normal menu. Pressing the MENU button and holding it for about 3 seconds displays the Set Up? menu.
- When a menu is displayed, pressing the MENU button clears the menu from the display.

2 RELEASE button
Pressing this button grabs an image into memory.

3 FUNCTION UP/DOWN buttons
When a menu is displayed, pressing these buttons moves the cursor up or down in the menu. These buttons are effective only when a menu is displayed.

4 DATA UP/WHITE button
When a menu is displayed, pressing this button increases numeric values shown for menu parameters in the displayed menu. With ON/OFF parameters, it toggles the setting on or off. When no menu is displayed, this button initiates automatic white balance adjustment.

5 DATA DOWN/BLACK button
When a menu is displayed, pressing this button decreases numeric values shown for menu parameters in the displayed menu. With ON/OFF parameters, it toggles the setting on or off. When no menu is displayed, this button initiates automatic black balance adjustment.

6 LENS connector
Connects to the cable from the lens.

7 DP connector
Connects to the cable from the digital processor.

8 TRIG connector
Connects to the trigger cable (HKA-100RZ) going to a film camera.

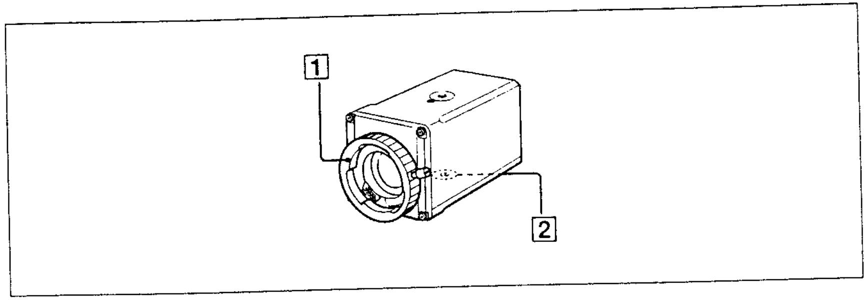
9 PC IN connector
Connects to the flash cable (PC extension cable - sold separately) from a film camera.

10 FLASH connector
Connects to the cable from the flash.

11 VF connector
Connects to the cable from the viewfinder.

12 REMOTE connector
Connects to the cable from the RM-S72 remote control unit.

Front panel

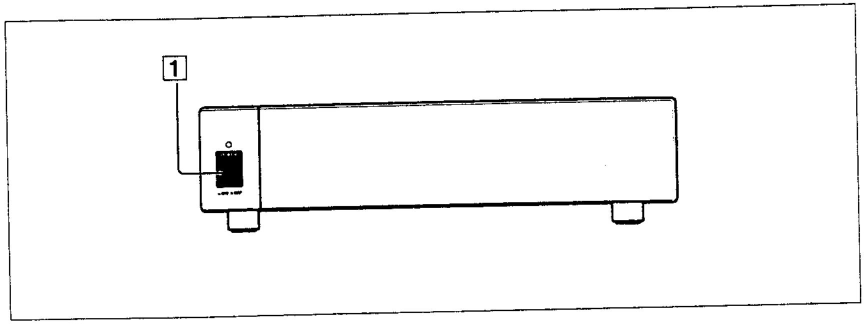


1 Lens mount

2 Retaining screw hole
Hole for the retaining screw used for fastening the camera to the tripod adapter.

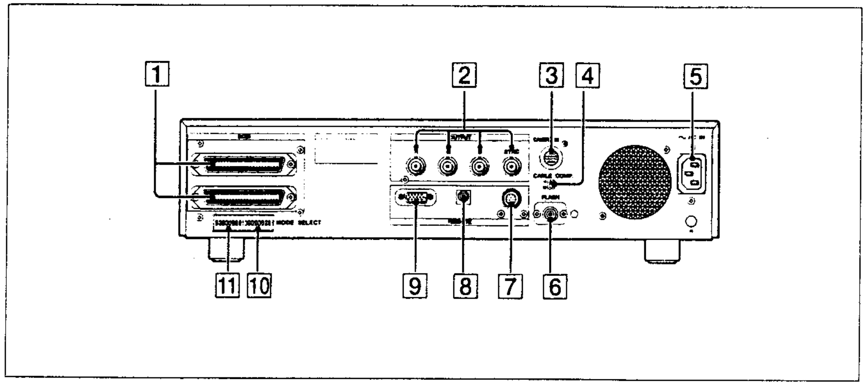
Digital Processor

Front panel



1 Power switch
Turns the digital processor's power on and off.

Rear panel


1
2
3
4
5
11
10
9
8
7
6

1 **SCSI connector**
Connects the digital processor to other SCSI devices (such as a computer or printer).

2 **OUTPUT connector (R, G, B, SYNC)**
These connectors connect to the cable from the monitor

3 **CAMERA IN connector**
Connects to the cable from a camera.

4 **CABLE COMP switch**
Change the setting of this switch according to the length of the camera connection cable. Set it to 5 for a 5-meter cable, and to 25 for a 25-meter cable.

5 **AC IN connector**
Connects to the AC power cord.

6 **FLASH connector**
Connects to the cable from a flash.
This connector is not used when the flash cable is plugged into the connector on the camera.

7 **REMOTE1 connector**
Connects to the RM-930 remote control unit.

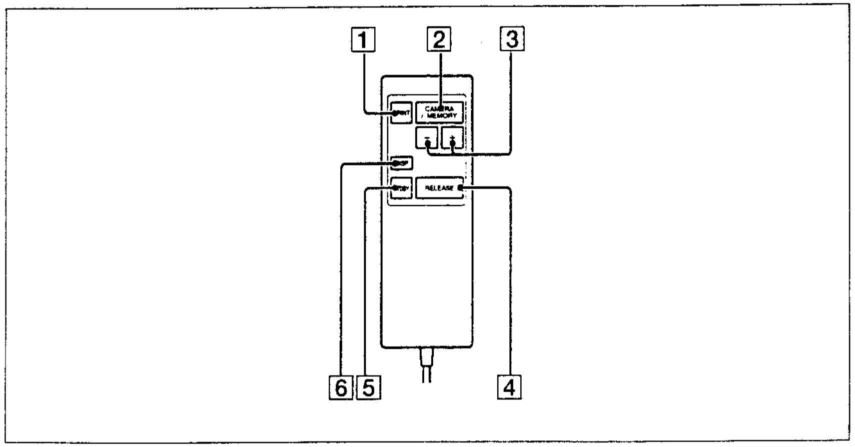
8 **REMOTE2 connector**
Connects to the cable from a foot switch.

9 **REMOTE3 connector**
Reserved.

10 **DIP switch 2**
See page 40 for DIP switch setting procedures.

11 **DIP switch 1**
See page40 for DIP switch setting procedures.

RM-S72 Remote Control Unit (included)


1
2
3
PRINT
CAMERA / MEMORY
RELEASE
6
5
4

1 **PRINT button**
Used for displaying the Print menu and for printing. ("Printing Images" page 24)

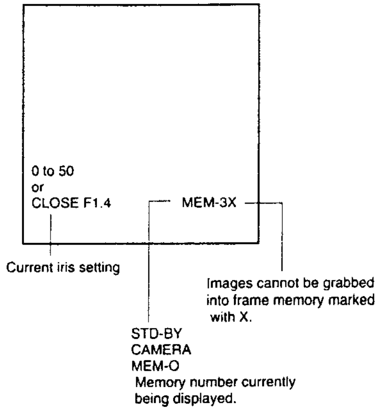
2 **CAMERA/MEMORY button**
Pressing this button switches the monitor screen between the CAMERA mode and the MEMORY mode.

3 **+ / – buttons**
These buttons set the following values.
STILL iris value: When the monitor screen is in the STANDBY mode or the CAMERA mode, these buttons increase or decrease the STILL iris value.
Memory number: When the monitor screen is in the MEMORY mode, these buttons change the memory number.
Print layout: When the Print menu is displayed, these buttons change the print layout.
Full - Half - Index

4 **RELEASE button**
Pressing this button grabs an image into memory. This performs the same function as the RELEASE button on the camera.

5 **STDBY button**
Switches the monitor screen to the STANDBY mode.

6 **DISP button**
Displays mode information at the bottom of the screen.


0 to 50
or
CLOSE F1.4
MEM-3X
Current iris setting
Images cannot be grabbed into frame memory marked with X.
STD-BY
CAMERA
MEM-O
Memory number currently being displayed.

RM-930 Remote Control Unit (sold separately)

Remote control of the camera is possible by connecting the RM-930 remote control unit (sold separatly) to the digital processor.

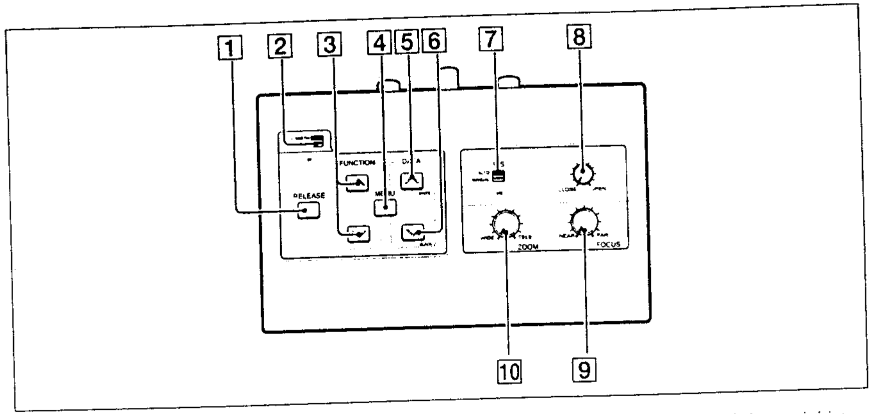
Connection

Using the appropriate cable, connect the CAMERA connector on the RM-930 to the REMOTE1 connector on the digital processor.
A monochrome monitor signal is output from the MONITOR OUT terminal.
Caution: Do not connect anything to the DC IN terminal. Making any connection to this terminal could result in damage the equipment.

Operation

Affix the template provided to the left side of the remote control unit's top. The figure below shows the top of the unit with the template attached.

When the template is affixed, buttons on the top left side have the same functions as buttons with the corresponding on the camera. Setting the CAMERA/REMOTE switch to the remote position enables the RM-930 and disables the buttons on the camera. Setting it to the CAMERA position disables the RM-930 when you want to control operation directly from the camera.



1 **RELEASE button**
Pressing this button grabs an image into memory.

2 **CAMERA/REMOTE switch**
Set this switch to REMOTE when using the RM-930. With the REMOTE setting, buttons on the camera are disabled. Set the switch to CAMERA if you want to use the buttons on the CAMERA. With the CAMERA setting, the RM-930 is disabled.

3 **FUNCTION ∧/∨ buttons**
When a menu is displayed, pressing these buttons moves the cursor up or down in the menu. These buttons are effective only when a menu is displayed.

4 **MENU button**
This button turns menu display (and Set Up menu) on and off on both the monitor and the viewfinder.

- When no menu is displayed, pressing the MENU button displays the normal menu. Pressing the MENU button and holding it for about 3 seconds displays the Set Up? menu.
- When a menu is displayed, pressing the MENU button clears the menu from the display.

5 **DATA ∧/ WHITE button**
When a menu is displayed, pressing this button increases numeric values shown for menu parameters in the displayed menu. With ON/OFF parameters, it toggles the setting on or off. When no menu is displayed, this button initiates automatic white balance adjustment.

6 **DATA ∨ / BLACK button**
When a menu is displayed, pressing this button decreases numeric values shown for menu parameters in the displayed menu. With ON/OFF parameters, it toggles the setting on or off. When no menu is displayed, this button initiates automatic black balance adjustment.

7 **IRIS switch**
This switch cannot be used. (It is used only when using a video camera.)

8 **IRIS knob**
Turning this knob to the left closes the iris, and turning it to the right opens it.

9 **FOCUS knob**
This knob has no function with a standard lens. With an power focus lens, it adjusts the focus. The focus range is from 0 (near) to 255 (infinity).

10 **ZOOM knob**
This knob has no function with a standard lens. With an power zoom lens, it adjusts the zoom. The zoom range is from 0 (wide angle) to 255 (telephoto).

Note
that, depending on the characteristics of the lens being used, operation of the knob may not consistently correspond with operation of the lens.

1-3. SYSTEM FEATURES

The DKC-5000 digital photo camera is a system for processing and storing images captured with a still-image digital camera. Stored images can be output to a printer or sent to a computer for further processing via a SCSI bus.

Features of the system are as follows.

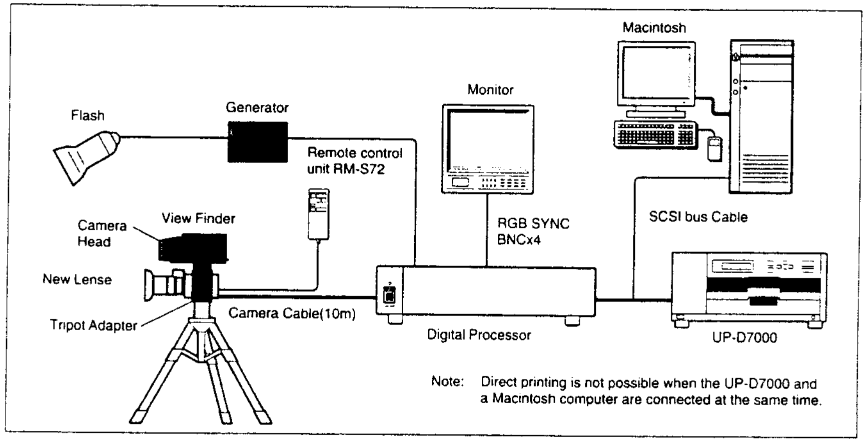
- The camera head contains three 1/2-inch CCD units, each of which contains 440,000 picture elements. A combination of element offset and high-precision microtechnology enables vertical and horizontal resolutions of 800 TV lines when the camera is used at normal temperature, 20°C/68°F).
- By adding expansion memory, the system is capable of storing up to 10 images, making it easier to select from between a number of shots taken in succession.
- The system connects directly to its UP-D7000 digital printer without any intermediary computer.
- Use of a 10-bit look-up table during A/D conversion allows a wide degree of freedom in expression of tone.
- Programmable dynamic range (gamma and knee).
- Special lens used with the camera has extremely light focus and zoom ring movements, allowing smooth manual adjustment.
- Procedures for using the camera are quite similar to those used with conventional cameras, allowing the digital camera to be used comfortably by photographers lacking experience with video cameras or digital equipment.
- Use of a 1/2-inch FB 38-mm bayonet-type lens mount makes it possible to use ordinary 1/2-inch lenses in addition to the system's optional VCL-712BXS zoom lens. By using an adapter, it is also possible to use 2/3-inch lenses.
- Flash photography is possible using X contact output.
- Using release synchronization, a film camera (the Mamiya RZ-67) can be used for proofing.
- All functions of the system can be controlled using add-on software (a plug-in module) that works under Photoshop on the Macintosh.

Examples of Applications

The basic system is composed of the following parts.

Portrait system

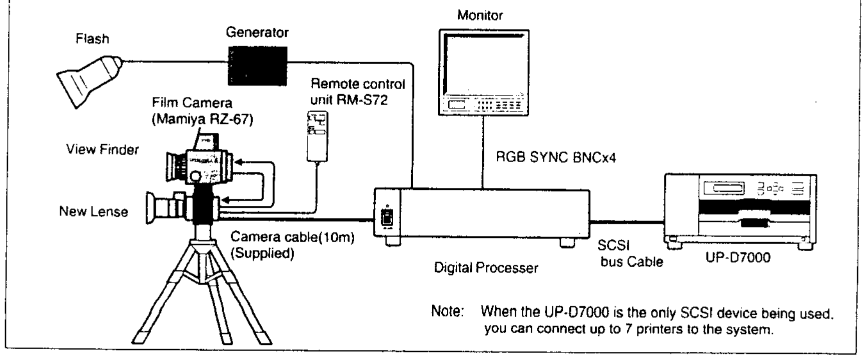
The figure below shows the digital camera system together with a full-color digital printer in an instant portrait system. After taking a number of shots, images can be checked on the monitor and selected for printout.


Macintosh
Monitor
Flash
Generator
Remote control unit RM-S72
Camera Head
View Finder
RGB SYNC BNCx4
SCSI bus Cable
New Lense
Camera Cable(10m)
Tripot Adapter
Digital Processor
UP-D7000

Note: Direct printing is not possible when the UP-D7000 and a Macintosh computer are connected at the same time.

Photo proof system

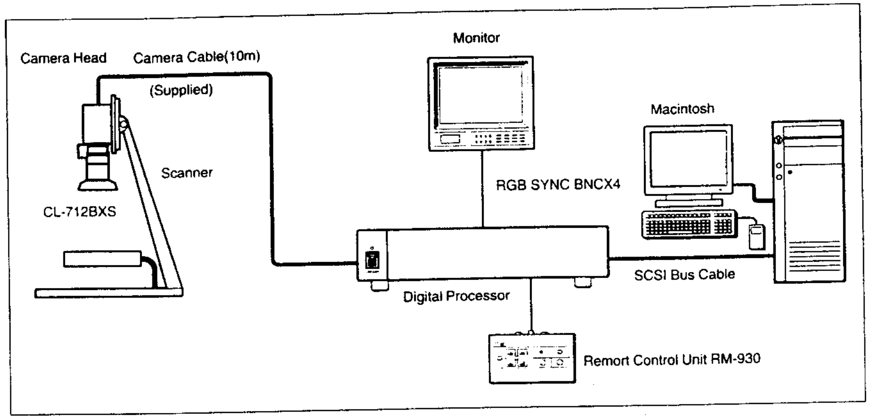
In the photo proof system, the digital photo camera is used to quickly check shots taken together with a film camera. he ability to check images increases work efficiency of developing, enlarging, and printing.


Monitor
Flash
Generator
Remote control unit RM-S72
Film Camera (Mamiya RZ-67)
View Finder
RGB SYNC BNCx4
New Lense
Camera cable(10m) (Supplied)
SCSI bus Cable
Digital Processer
UP-D7000

Note: When the UP-D7000 is the only SCSI device being used, you can connect up to 7 printers to the system.

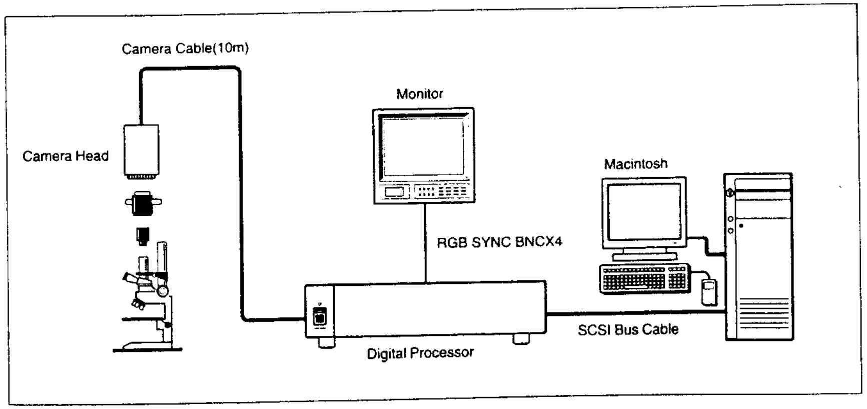
Still image filing system

In this system, the digital photo camera is used together with a computer to used for storing image data to make up an image filing system.


Camera Head
Camera Cable(10m)
(Supplied)
Scanner
CL-712BXS
Monitor
Macintosh
RGB SYNC BNCX4
Digital Processor
SCSI Bus Cable
Remort Control Unit RM-930

Medical image input system

This system is used to capture image data for use in medical applications.


Camera Cable(10m)
Camera Head
Monitor
Macintosh
RGB SYNC BNCX4
SCSI Bus Cable
Digital Processor

1-4. MONITOR SCREEN DISPLAY MODES AND CAMERA MODES

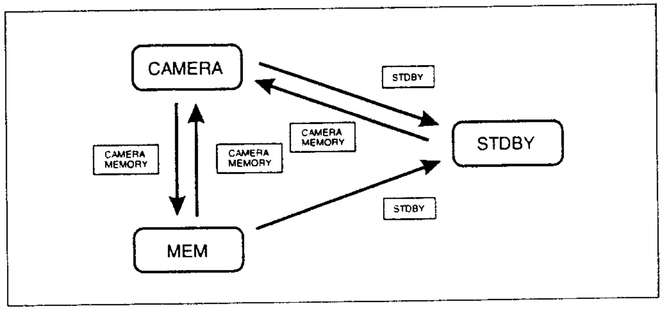
This section explains the relationship between the monitor's display modes and the camera modes.

Display modes

The monitor and viewfinder screens have three display modes. The current mode appears at the bottom of the screen when you press the DISP button on the remote control unit.

- CAMERA mode (CAMERA): In this mode, the live image viewed by the camera with the iris fully open is displayed directly on the viewfinder and monitor screens. When you push the RELEASE button with display in this mode, it takes a moment for the iris to change to the set value before the image is grabbed into memory.
- MEMORY mode (MEM): In this mode, images stored in memory are displayed on the viewfinder and monitor screens. This is also the mode used for switching between image memories.
- STANDBY mode (STDBY): In this mode, the camera displays images viewed at the set iris value on the viewfinder and monitor screens. Pressing the RELEASE button in this mode immediately grabs an image into memory.

Display mode switching is done with by pressing the CAMERA/MEMORY and STDBY buttons on the remote control unit. The relationship between button operation and mode transitions is as follows.


CAMERA
STDBY
CAMERA MEMORY
STDBY
CAMERA MEMORY
CAMERA MEMORY
STDBY
MEM

Camera modes

Broadly speaking, the camera has two modes of operation: the LIVE mode and the STILL mode.

LIVE mode

The LIVE mode is used for checking the subject composition prior to taking photographs.

Whenever the camera is in the LIVE mode, the iris of the lens is kept fully open. The brightness of the image is determined by the camera's ISO speed setting and the shutter speed setting.

STILL mode

The STILL mode is used for taking pictures.
When the camera is in the STILL mode, the lens iris is stopped down to the preset value.
Further, the STILL mode includes two sub-modes: the FLASH ON mode and the FLASH OFF mode.
The FLASH ON mode is used when taking photographs with a flash. When the camera is in the FLASH ON mode, the color temperature is automatically set to 5600K, and the electronic shutter speed is set to 1/25 second.
The FLASH OFF mode is used for taking non-flash photographs. When the camera is in the FLASH OFF mode, a number of settings are the same as in the LIVE mode.

The camera maintains a number of settings independently for different modes.

- LIVE mode
- STILL mode
  - Flash On mode
  - Flash Off mode

Relationship between display modes and camera modes

The camera mode changes along with the monitor display mode. For example, when the digital processor is switched to the CAMERA mode, the camera automatically switches to the LIVE mode and the monitor displays the image viewed by the camera. When the digital processor is switched to the STANDBY mode, the camera automatically switches to the STILL mode and the monitor shows the image viewed by the camera.
The relationship between the display mode and the camera mode is as shown in the table below.

Display mode	Camera mode	Monitor display
CAMERA	Live	Camera image
STANDBY	Still	Camera image
MEMORY	Live or Still	Frame memory image

Notes

- When display is switched to the MEMORY mode, the camera mode does not change.
- The display mode is not affected by changing the camera between the FLASH ON and FLASH OFF modes.

1-5. ABOUT THE OPERATION

Under ordinary circumstances, you can accomplish the same operation either from the camera or from the connected computer. Choose whichever method of operation is more convenient. For example, if you are using the digital photo camera in a photo proofing system and you do not need to process the images by computer, all operations from photography to printout can be controlled from the camera.

This section explains the following operations:

- Turning on the power (page 12)
  Explains the sequence in which the digital processor and connected devices should be pousered on On Off.

- Contrilling the system without leaving the camera (page 13)
  Explain procedures for controlling operation entirly from the camera for those whose style of work is centered around camera.

- Contrilling the system from the computer (page 29)
  Explains procedures for controlling operation from the computer. These procedures are useful when editing images.

- Using digital processor as a photo proofing system (page 33)
  Explains special procedures required in order to use the digital processor in a photo proofing system.

1-6. TURNING THE POWER ON/OFF

Turn the digital processor and peripheral devices on and off in the following sequence.

Turning on the Power

Before using the system for the first time, make sure that the DIP switches are properly set before turning on the power. (page 40)

1 First, turn on peripherals such as the printer and monitor.

2 Next, turn on the digital processor.
(The system beeps once when you turn on the power.) When BEEP is set On by DIP switch, the processor beeps twice after start-up is completed to indicate that the system is ready for use.

3 If you are using a computer, turn on the computer's power.

Note
Please note that, if you turn on the computer before hearing the double beep from the digital processor (indicating that the digital processor is ready for use), the computer may fail to start up properly.

Turning off the Power

Turn off the power as follows.

1 When using a computer, turn off the computer's power.

2 Turn off the digital processor.

3 Turn off peripheral devices, such as the printer and monitor.

1-7. CONTROLLING THE SYSTEM WITHOUT LEAVING THE CAMERA

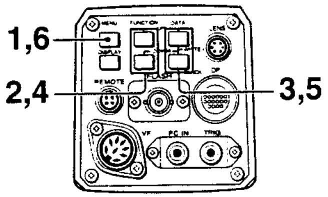
In order to control the system from the camera, use the controls on the camera together with the RM-S72 remote control unit provided with the system.

This section explains the following aspects of camera and remote control unit operation.
- Setting the camera (page 13)
- Adjusting white balance (page 15)
- Composing and focusing the picture (page 20)
- Adjusting the iris (page 20)
- Taking picture (page 21)
- Viewing picture (page 23)
- Printing Images (page 24)
- Adjusting the black balance (page 27)

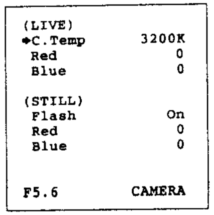
Note
Before using the camera for the first time, be sure to make the black balance adjustment.

Making Camera Settings

Before taking pictures, set the color temperature and camera illumination conditions.



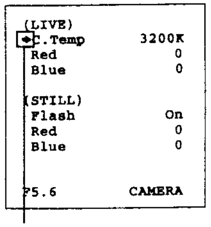
1 Press the MENU button on the camera.
The normal menu appears.



```
(LIVE)
◆C.Temp      3200K
 Red             0
 Blue            0

(STILL)
 Flash          On
 Red             0
 Blue            0


F5.6        CAMERA
```

Continue to next page ➜

2 Press the FUNCTION UP, DOWN buttons to move the cursor ◆ to C.Temp.

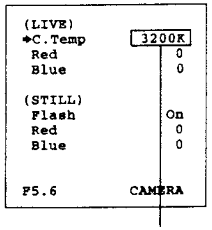


```
(LIVE)
◆C.Temp        3200K
 Red               0
 Blue              0

(STILL)
 Flash            On
 Red               0
 Blue              0

F5.6          CAMERA
```

Move ◆ to C.Temp

3 Select the color temperature for the LIVE mode by pressing the DATA UP, DOWN buttons.

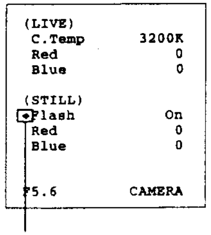
Type of lighting used	Color temperature
Tungsten light	3200K
Sunlight, fluorescent light	5600K



```
(LIVE)
◆C.Temp        3200K
 Red               0
 Blue              0

(STILL)
 Flash            On
 Red               0
 Blue              0

F5.6          CAMERA
```

Display the desired setting

4 Press the FUNCTION UP/DOWN buttons to move the cursor ◆ to Flash.

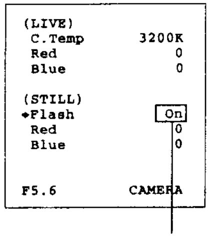


```
(LIVE)
 C.Temp        3200K
 Red               0
 Blue              0

(STILL)
◆Flash            On
 Red               0
 Blue              0

F5.6          CAMERA
```

Move ◆ to Flash

5 Select whether or not the flash will be used by pressing the DATA UP, DOWN buttons.

Illumination condition	Setting
When using flash	On
When not using flash	Off



```
(LIVE)
 C.Temp        3200K
 Red               0
 Blue              0

(STILL)
◆Flash            On
 Red               0
 Blue              0

F5.6          CAMERA
```

Display the desired setting

Note

The color temperature setting used in the STILL mode is the same as that set for the LIVE mode. When Flash On is selected, the color temperature is fixed to 5600K.

6 Press the MENU button to cancel menu display.

Adjusting the White Balance

In order to obtain natural-looking color rendition, you must adjust the white balance before using the camera for the first time and whenever lighting conditions change. The camera is designed to make automatic, independent white balance adjustments for mal light and flash. Settings made are stored for about 10 years even when the power is turned off.

When Flash is On

When Flash is On, white balance adjustments must be made separately for normal light and flash. The normal light white balance adjustment is needed for verifying photo composition in the CAMERA mode. Flash white balance is needed for taking pictures with flash lighting.

When Flash is Off

When Flash is Off, only normal light white balance adjustment is necessary.

Light Sources and Display Modes Used for Adjusting White Balance

When Flash is On, the light source used for adjusting white balance depends on the display mode. When Flash is Off, normal light is used for white balance adjustment regardless of the display mode.

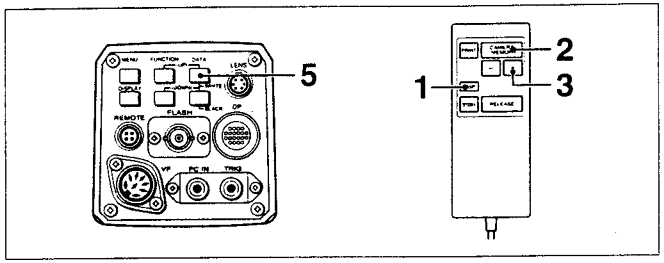
Illumination condition	Display Mode	
	CAMERA MODE	STANDBY MODE
Flash ON	Normal light	Flash light
Flash Off	Normal light	Normal light

White Balance Adjustment with Normal Lighting

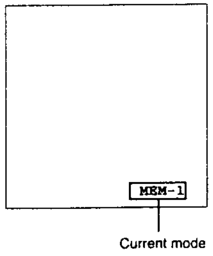
This section describes procedures for adjusting white balance for normal lighting. This procedure is also used to make the normal light white balance adjustment when using flash.

Check Before Starting

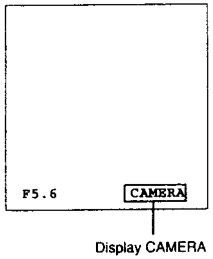
Make sure all camera settings are made before adjusting the white balance. (page 13)


5
1
2
3
REMOTE
FLASH

1 Press the DISP button.
The mode display appears.


MEM-1
Current mode

2 **When Flash is On**
Press the CAMERA/MEMORY button to switch to the CAMERA mode.


F5.6
CAMERA
Display CAMERA

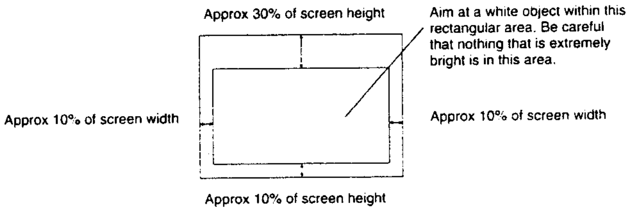
When Flash is Off
White balance adjustment is possible either in the CAMERA mode or the STANDBY mode.

3 Adjust the iris setting of the lens.

Lens type	Procedure
VCL-712BXS or other lens with automatic iris	Set lens switch to AUTO
Lens with manual iris	Set appropriate iris value

When in the STANDBY mode with Flash Off selected, adjust the lens iris using the + and – buttons on the remote control unit before adjusting the white balance. (page 20)

4 Duplicating the lighting conditions under which you will take the subject, zoom in on a white object (such as a white chart or white cloth) to where the screen is completely white.


Approx 30% of screen height
Aim at a white object within this rectangular area. Be careful that nothing that is extremely bright is in this area.
Approx 10% of screen width
Approx 10% of screen width
Approx 10% of screen height

5 Initiate adjustment by pressing the WHITE button. When adjustment is completed, the message "WHITE:OK" appears on the viewfinder and monitor screens.

Note

Regardless of whether Flash is On or Off, the camera automatically compensates for brightness during white balance in the CAMERA mode as long as both ISO and the shutter speed are set to AUTO. With settings other than AUTO, first set an appropriate brightness level.

White Balance Adjustment for Flash

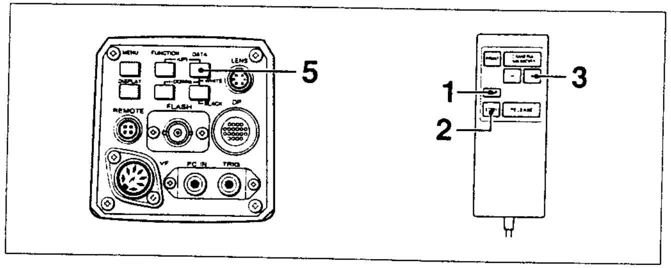
When Flash is On, white balance is adjusted while triggering the flash.

Check Before Starting

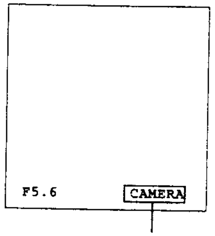
Make sure all camera settings are completed before adjusting the white balance.
If any settings are not completed, make them as explained on at page number indicated below.

- Camera settings (color temperature and illumination conditions) (page 13)
- Flash trigger interval (page 45)

Please note that white balance adjustment will not work smoothly unless the set flash interval exceeds the charging time of the flash.

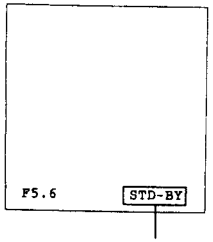


1 Press the DISP button.
The mode display appears.



Current mode

2 Press the STDBY button to switch to the STANDBY mode.

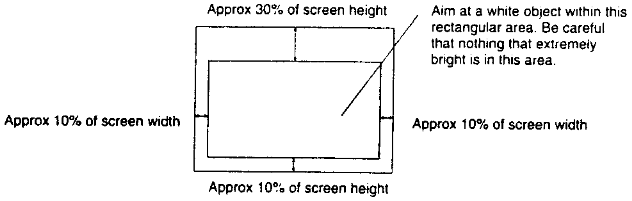


Switch to the STD-BY mode

3 Adjust the lens iris.

Lens type	Procedure
VCL-712BXS or other lens with automatic iris	Set lens switch to AUTO and use the + and – buttons on the remote control unit to make an appropriate iris setting.
Lens with manual iris	Set appropriate iris value

4 Duplicating the lighting conditions under which you will take the subject. zoom in on a white object (such as a white chart or white cloth) to where the screen is completely white.


Approx 30% of screen height
Aim at a white object within this rectangular area. Be careful that nothing that extremely bright is in this area.
Approx 10% of screen width
Approx 10% of screen width
Approx 10% of screen height

5 Initiate adjustment by pressing the WHITE button. button for about one second. The flash triggers from 4 to 10 times as white balance is adjusted. Adjustment is completed within approximately 10 to 20 seconds. then "WHITE:OK" is displayed.

Note

Be sure to do white balance adjustment before starting up the plug-in module on the computer.

When adjustment fails

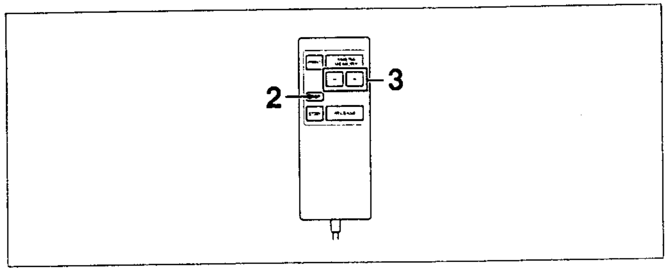
If automatic white balance adjustment fails. one of the following error messages appears. Check the explanation given for each message. then try adjustment again.

Error message	Explanation
WHITE : NG	Unable to adjust white balance.
WHITE : NG LEVEL Low	Video level too low.
WHITE : NG LEVEL High	Video level too high. or subject too bright.
WHITE : NG C.TEMP High	Subject color temperature too high.
WHITE : NG C.TEMP Low	Subject color temperature too low.

Adjusting Framing and Focus

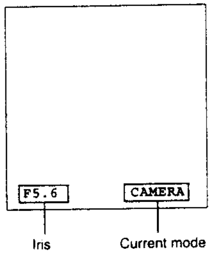
Aim the camera at the subject and adjust the zoom and focus while watching the subject in the viewfinder.
Lenses other than the VCL-712BXS that are capable of auto-zoom and auto-focus can be controlled from the RM-930 remote control unit (Sold separetely). When adjusting such a lens manually, set the IRIS switch to MANUAL.

Adjusting the iris

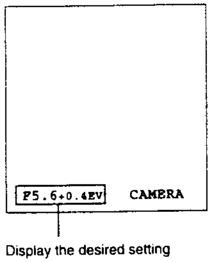


1 Set the lens' IRIS switch to AUTO.

2 Press the DISP button. The mode display appears.



3 Set the iris by pressing the + and - buttons.



The iris setting changes as indicated below according to whether you are using the VCL-712BXS or an other lens.

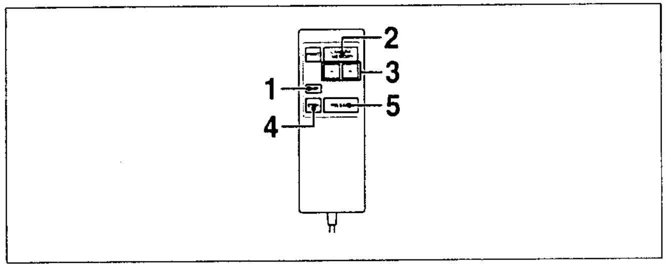
Lens type	Iris setting
VCL-712BXS	CLOSE to F1.4 (in 0.2-EV steps)
Other lens	0 to 51 (0: CLOSE, 51: OPEN)

Note

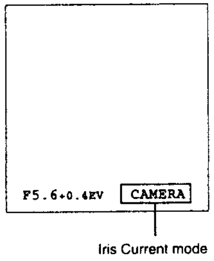
The F number is accurately set when using the VCL-712BXS. However, with other lenses, variances in lens characteristics make it impossible to assure that a given F number will result for a given setting. However, this is of no concern if you start with the iris fully open, then stop it down until you reach the desired value.

Taking pictures

When the timing of shutter release is critical, as when taking action shots of people or other moving objects, stop the iris down in advance to ensure that the image you see when you press the release button is the one grabbed by the system. When taking shots of stationary objects, you can have the camera stop down the iris and grab the image in one operation.

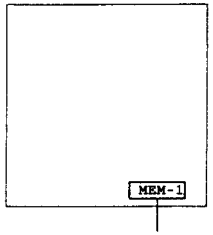


1 Press the DISP button. The mode display appears.



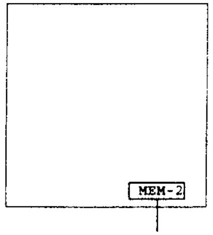
Continue to next page ➡

2 Press the CAMERA/MEMORY button to switch to the MEMORY mode.



Switch to MEM

3 Use the + and – buttons to select the memory into which the image is to be grabbed.



Display the desired memory

4 Press the STDBY button.
The iris stops down to the preset setting. Depending on the setting, this may darken the image appearing in the viewfinder and monitor. When 712BXS is selected, it takes about 0.5 second for the iris to stop down to the set value. If Others is selected, the message "WAIT" appears and it takes about 2 seconds for the iris to stop down to the set value.

You will hear a double beep when iris setting is completed.

This step is not necessary if you are doing iris stop-down and image grabbing all in one step; go on to step 5.

5 Press the RELEASE button.
The image is grabbed into memory.
If mode display is OFF and the Cont release mode is selected, the monitor momentarily displays the number of the selected memory.

If you skipped step 4
If you skipped step 4, the iris is stopped down automatically and the image is grabbed into memory.

Taking pictures with the Cont release mode selected in the SETUP-MODE menu
When Cont is selected as the release mode in the SETUP-MODE menu and the DKB-5008 frame memory board is installed, up to 10 pictures can be successively stored in memory by repeatedly pressing the RELEASE button. In the Cont release mode, the amount of time required for image grabbing when you press the RELEASE button depends on whether the camera waits for the next exposure in the STANDBY mode or in the CAMERA mode. Use the former mode if exposure timing is important, and the latter if you want to confirm picture composition for each shot. You can switch between the two modes by selecting On or Off as the Iris Open setting in the Camera menu.

Taking pictures in the Single release mode
When you press the RELEASE button repeatedly with Single selected as the release mode, only the last image taken is stored in the selected memory.

Viewing Pictures

You can check photos taken by displaying them on the screen of the viewfinder or monitor.

Viewing pictures taken in the SINGLE release mode

Pressing the RELEASE button automatically switches display to the MEMORY mode, allowing the photo to be confirmed immediately.
As long as you do not press the CAMERA/MEMORY button, the camera remains in the STANDBY mode. This makes it unnecessary to press the STDBY button, so you will still obtain correct exposure timing if you retake the picture by pressing the RELEASE button again.

Viewing pictures taken in the CONT release mode

1 Switch to the MEMORY mode. The image stored in memory is displayed on the viewfinder and monitor screens.

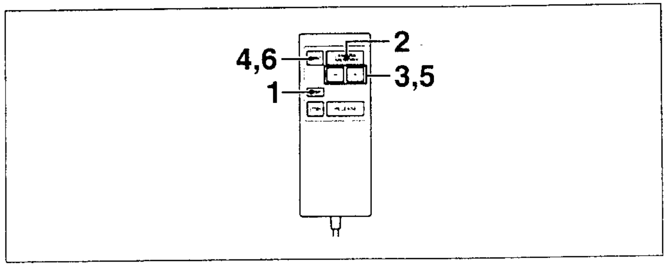
2 Press the + and – buttons.
This switches between memories containing different images.

Printing images

By connecting the UP-D7000 digital printer to the digital processor, you can print out images contained in memory by remote control. This is called direct printing. Printing is not possible during image data transfer.

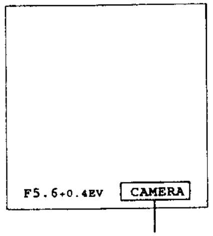
Notes

- Direct printing is not possible when a Macintosh computer and the UP-D7000 are connected to the digital processor at the same time. In this case, print using the plug-in module for printer output (UPS-7001H) or the driver selected through the Chooser (UPS-7002H).
- When you want to print, turning on the digital processor's power after setting direct printing to ON with the DIP switches of the digital processor. (page 40)
  Also, make sure that the UP-D7000 is the only device present on the SCSI bus other than the digital processor.



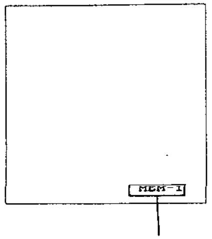
1 Press the DISP button. The mode display appears.

In the MEMORY mode, display the image to be printed.



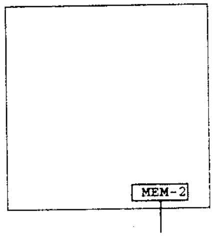
Current mode

2 Press the CAMERA/MEMORY button to switch to the MEMORY mode.



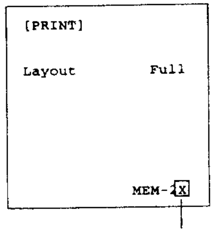
Switch to MEM

3 Use the + and – buttons to select the image to be printed.



Display the desired memory

4 Press the PRINT button.
The PRINT menu appears.

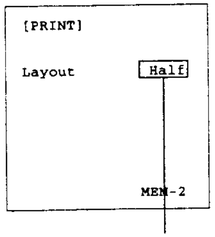


During image data transfer, an X mark is displayed here to indicate that image grabbing is not possible.
The X disappears when printing is completed.

If the PRINT menu does not appear

Image printing is not possible during transfer of image data. Wait until image transfer is completed.

5 Select the print size using the + and – buttons.

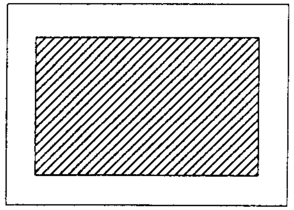


Select the desired size

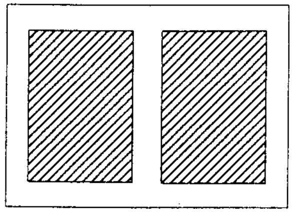
Continue to next page ➜

You can select from among full size, half size, and index size.

Full size (Full)



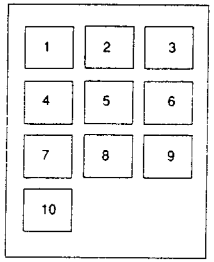
Half size (Half)



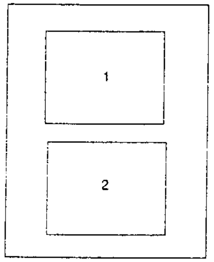
Same two images

Index size (Index)

With 10 frame memories (with the optional DKB-5008 memory board installed)



With 2 frame memories



6 Press the PRINT button. The processor beeps and the image data is transferred to the digital printer for printing. Image grabbing into the selected memory is not possible until transfer is completed.

To repeat image printing

To print the selected image a second time, repeat steps 5 and 6.
If you do not press any button, the PRINT menu disappears after about 4 seconds. If this happens, repeat steps 4 to 6.

To end the print mode

To end the print mode, simply wait for about 4 seconds and the PRINT menu disappears.

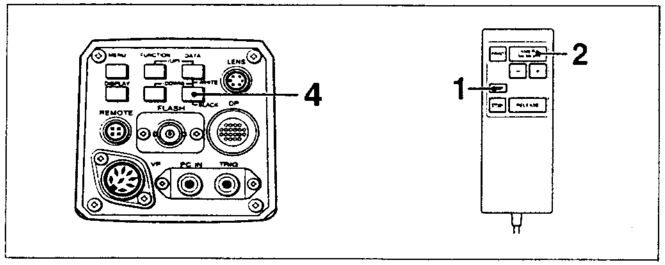
If you attempt to print from an empty memory

If you select an empty memory, an error message appears and nothing is printed if you select full or half-size prints in step 5.

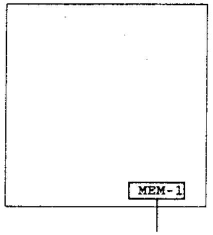
Adjusting the black balance

Black balance adjustment is required only in the following situations.
- When using the camera for the first time
- When switching from one camera to another one
- When you have not used a camera for an extended period of time
- When ambient temperature changes greatly, such as may happen when the seasons change

The black balance setting is maintained even when the power is turned off for a maximum of about 10 years.

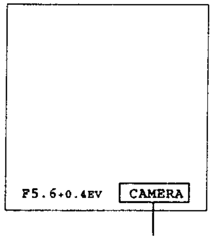


1 Press the DISP button. The mode display appears.



Current mode

2 Press the CAMERA/MEMORY button to switch to the CAMERA mode.



Switch to CAMERA

Continue to next page ➡

3 Verify that the lens's IRIS switch is set to AUTO. During black balance adjustment, the lens stops down automatically.

Note

If the lens is manually operated, stop the iris down all the way.

4 Press the BLACK button. When adjustment is completed, the message "BLACK:OK" appears.

During adjustment, you may observe some flicker on the viewfinder and monitor screens. This is normal.

When adjustment fails

If automatic black balance adjustment fails, one of the following error messages appears. Check the explanation given for each message, then try adjustment again.

Error message	Explanation
BLACK : NG	Unable to adjust black balance.
BLACK : NG IRIS CLOSE ?	Light entered the lens because the iris was not fully closed.

1-8. CONTROLLING THE SYSTEM FROM A COMPUTER

When using this system to produce image data for use in publishing applications or for processing on a computer, you can control practically all operation from the computer. This section explains how to operate the system using the plug-in module that is provided for use with Adobe Photoshop 2.5.

Check before installing

The following operations cannot be done from the computer. Do them at the camera before starting.

- Set the lens switch to AUTO.
- Aim the camera at the subject.
- Adjust picture composition and focus (when using the VCL-712BXS or other lens that does not have an automatic focusing function).
- Ajusting white balance and black balance. (pages 15 and 27)

Before you Begin

Before starting, you must set up the software operating environment and install the software.

System configuration

The following system configuration is necessary in order to use the plug-in module.

Hardware

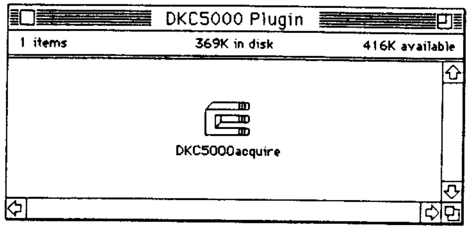
- A Macintosh series computer with at least 8 MB of memory and a hard disk (preferably, a Macintosh Quadra 800 or higher, with 16 MB or more of memory, a hard disk of 500 MB capacity or greater, and a full color video board).
- The Sony DKC-5000 digital still camera system

Software

Adobe Photoshop 2.5

Installation procedure

The Adobe Photoshop 2.5 plug-in module is contained on the Software floppy disk. Copy the module into the Photoshop plug-in modules folder.



Installation procedure
Copy the plug-in module into the folder specified in Photoshop as the plug-in module folder.

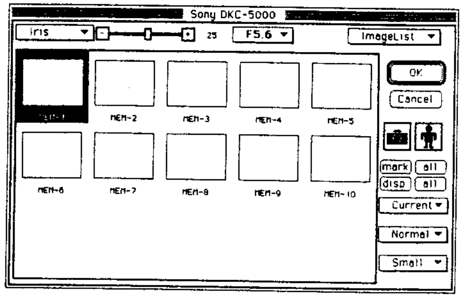
Starting up the Software

Display the screen used for controlling the system as follows.

1 Start up Photoshop.

2 From Photoshop's File menu, select Grab (the input plug-in).

3 From within Acquire (the input plug-in), open the "Sony DKC-5000..." menu.
A dialog box like the following appears.



This dialog box is referred to as an image list panel.

Note
MEM-1 through MEM-10 are displayed only when the DKB-5008 frame memory board is installed. When the DKB-5008 is not installed, only MEM-1 and MEM-2 are displayed.

Adjusting the Iris

Computer control over the iris is possible only when using a lens that is equipped with an automatic iris. With other lenses, the iris must be adjusted using the aperture ring on the lens.

The iris setting changes as indicated below according to whether you are using the VCL-712BXS or an other lens.

712BXS:	CLOSE to F1.4 (in 0.2-EV steps)
Others:	0 to 51 (where 0 is fully closed and 51 is fully open)

Note
Note that, although the F number is accurately set when using the VCL-712BXS, characteristics of other lenses make it impossible to assure that a given F number will result for a given setting. However, you can always obtain consistent results by starting with the iris fully open, then stopping it down until you reach the desired value.

1 Select "Iris" in the menu at the upper left of the control dialog.

2 Drag the slide bar left or right, or click on the + or – buttons.
The iris value to the right of the slide bar changes, reflecting the change in the lens' iris setting.

Taking Pictures

1 Display the image list panel.

2 Click on the memory into which the image is to be saved.

3 Click on the (STANDBY) button.

The camera switches to the (STANDBY) mode.

4 Click on the (RELEASE)button.

The image is grabbed into memory and a miniature of the image is displayed in the image list panel of the computer and monitor.

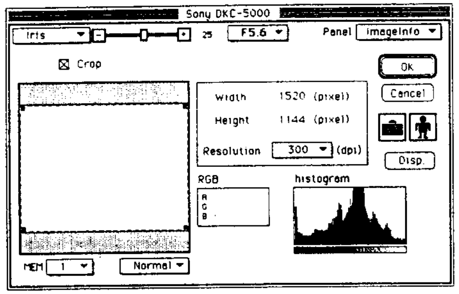
Transferring Images to Photoshop

1 From the image list panel, click on the memory containing the image to be transferred.
Simply click on one memory if only one image is to be transferred. If you want to transfer multiple images, click on the [mark] button after clicking on each memory to be transferred. If you want to transfer all images, click on the [all] button.

2 Click on the [OK] button.
The image(s) is transferred to Photoshop.

Cropping Images

1 Pull down the panel selection menu and select the image information panel.


Sony DKC-5000

Iris 25 F5.6 Panel imageInfo

☒ Crop

Width 1520 (pixel)
Height 1144 (pixel)
Resolution 300 (dpi)

MEM 1 Normal

OK
Cancel
Disp.
RGB
R
G
B
histogram

2 Click on the Crop check box.
Lines indicating the crop area appear in the miniature image display box.

3 Set the size and position of the cropping area with the mouse.
You can set the size of the cropping area by moving its sides with the mouse.
You can move the cropping area by moving the cursor inside the area and dragging with the mouse.

1-9. USING THE DIGITAL PROCESSOR AS A PHOTO PROOFING SYSTEM

When using this system for proofing photos, switch the digital processor to the photo proof mode before taking photographs. This section explains how to use the digital processor as a photo proofing system.

Limitations

The following restrictions apply when using the digital processor in the photo proof mode.

- The FLASH mode cannot be turned off.
- The RELEASE mode cannot be switched to Single.
- The RELEASE mode's Iris Open setting cannot be turned off.

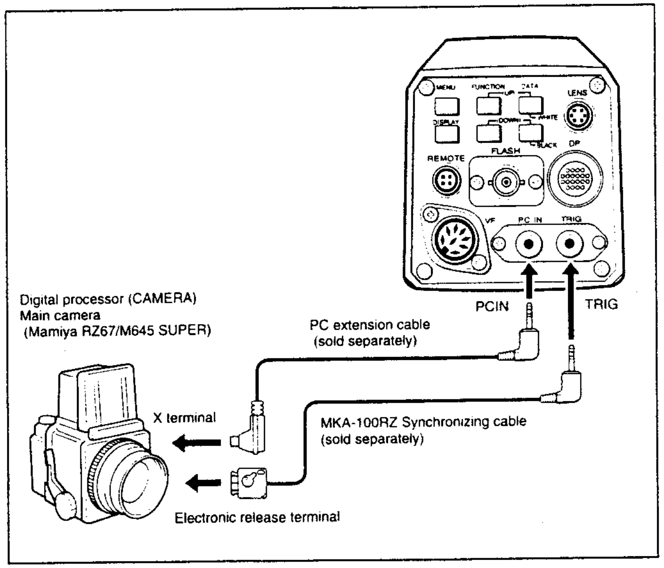
These restrictions apply even if RESET is selected.

Before Turning on the Power

Do the following before turning on the power.

1 Set the digital processor's DIP switch 2-2 (Photo Proof) to ON. (page 40)
This places the digital processor in the photo proof mode.

2 Connect the main camera to the digital processor's DKC-5000 camera.


MENU
FUNCTION
DATA
UP
DOWN
WHITE
BLACK
DISPLAY
LENS
REMOTE
FLASH
DP
VF
PC IN
TRIG
Digital processor (CAMERA)
Main camera
(Mamiya RZ67/M645 SUPER)
PCIN
TRIG
PC extension cable
(sold separately)
X terminal
MKA-100RZ Synchronizing cable
(sold separately)
Electronic release terminal

Note

Procedures for using the main camera are described in the instruction booklet accompanying the main camera.

Taking Photographs

The procedure for taking photographs is as follows.

Note

Before taking photos for the first time, do steps 1 through 4 below. This procedure "trains" the digital processor to accommodate the camera's shutter timing (shutter lag). Subsequently, skip steps 1 to 4 and start with step 5.

Unless you switch to a different camera, steps 1 through 4 need only be done once. However, you will need to do steps 2 through 4 again if you switch cameras.

1 Turn on the digital processor.

2 Make the main camera ready for shutter release.

3 Check that the display shows "Push [RELEASE]".

Note

In this condition, camera settings cannot be changed, nor can white or black balance be adjusted.

4 Press the RELEASE button.
The digital processor beeps twice, then the monitor displays OK.

Notes

- At this point, the selected RELEASE mode operation is not performed and no picture is grabbed into memory.
- You can avoid wasting film at this step by capping the lens or by inserting a shutter plate into the camera.
- If the digital processor beeps 5 times in succession and the message "PC ERROR" appears, recheck the camera connections, then start over again from step 2.

5 Take the picture in the usual manner.

Note

If an error message appears while taking pictures, follow the instructions given in the table below.

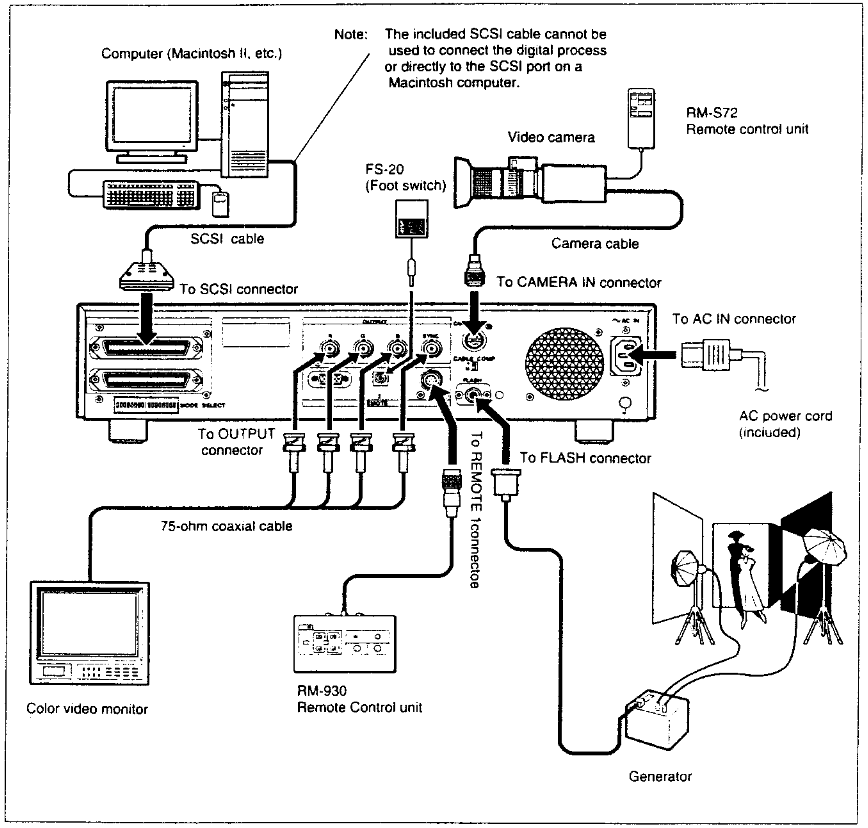
Error message	Explanation
PC ERROR	The camera signal was not input to the PC IN terminal. Re-check the camera connections.
SYNCHRO ERROR	Image grabbing was not successfully synchronized with the main camera. If this occurs, the trained time-lag is reset. Inspect the main camera, then start over from step 2 above.

Changing the main camera

When you change main cameras, you must re-train the digital processor for the main camera's time lag. To do this, reset the time lag by selecting Preset in the camera menu, then do steps 2 through 5 above with the new main camera.

1-10. CONNECTIONS

This section explains how to connect all system components. Depending on your application, some devices may not be needed in your system. To check which devices you should connect, please refer to the devices shown in the application examples given at the beginning of this manual. (page 7)


Computer (Macintosh II, etc.)
Note: The included SCSI cable cannot be used to connect the digital process or directly to the SCSI port on a Macintosh computer.
RM-S72
Remote control unit
Video camera
FS-20
(Foot switch)
SCSI cable
Camera cable
To SCSI connector
To CAMERA IN connector
To AC IN connector
AC power cord
(included)
To OUTPUT
connector
To REMOTE 1connectoe
To FLASH connector
75-ohm coaxial cable
Color video monitor
RM-930
Remote Control unit
Generator

1-11. MAKING SCSI CONNECTIONS

This section explains how to connect the DKC-5000 to the SCSI port on a Macintosh computer.

Note
Up to 7 SCSI devices can be connected in series to the SCSI port of the Macintosh computer. The maximum cable length cannot exceed 6 meters.

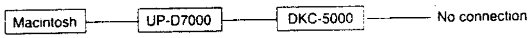
About the cable

To connect the digital processor to a Macintosh, please purchase the appropriate SCSI cable from any Macintosh dealer.
To add the DKC-5000 to an existing chain of SCSI devices, use the SCSI cable provided with the digital processor.

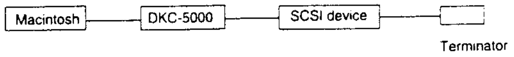
Note
If the device to which you will be connecting the digital processor has high-density SCSI connectors, you will need to purchase a cable that has a high-density 50-pin connector on one end and a full-size 50-pin connector on the other end.

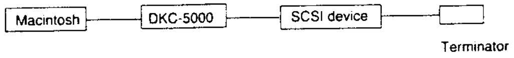
About terminators

The DKC-5000 is equiped with a built-in high performance active SCSI terminator. If you do not have a SCSI terminator, connect the DKC-5000 to the end of your SCSI device chain.



If you will be using the DKC-5000 with an external terminator, or if the DKC-5000 is not the last device in the SCSI device chain, disable the built-in terminator by setting DPI switch 2 to OFF.





Note
No more than 3 terminators may be used within a single SCSI chain.

About the SCSI ID

When connecting multiple SCSI devices in a chain, care must be taken to ensure that each has a unique SCSI ID in the range from 0 to 7. Set the digital processor's SCSI ID with DIP switches 1-6 to 1-8. ("Setting DIP switches" page 40)

Note
SCSI IDs 7 and 0 are reserved for the Macintosh system unit and its internal hard disk drive. SCSI IDs set for the various devices have no relation to the physical sequence of the devices within the SCSI device chain.

Making SCSI connections

1 Turn off all connected devices and the Macintosh computer.

2 Plug the SCSI cable into the SCSI connector on the DKC-5000. If the cable has two different connector sizes, plug the end with the full-size 50-pin SCSI connector into the DKC-5000. Close the connector clips on the DKC-5000 to lock the connector in place.

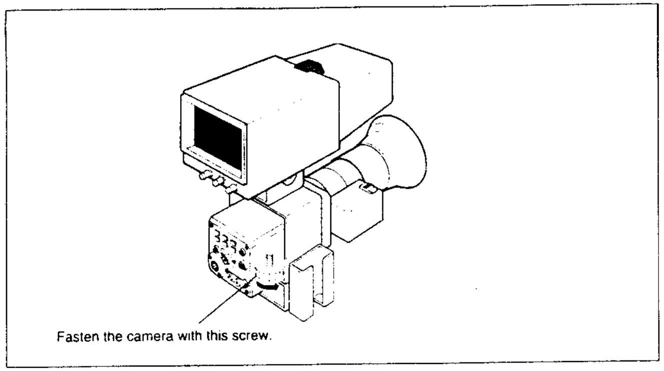
3 Plug the other end of the cable into the Macintosh or other SCSI device. Fasten the connector with the connector clips or screws.

1-12. SETTING UP THE CAMERA

Two different camera orientations, portrait (upright) and landscape (horizontal), are possible according to the type of pictures you want to take. The procedure for attaching the camera and viewfinder to the tripod adapter differs according to the orientation you want to use.

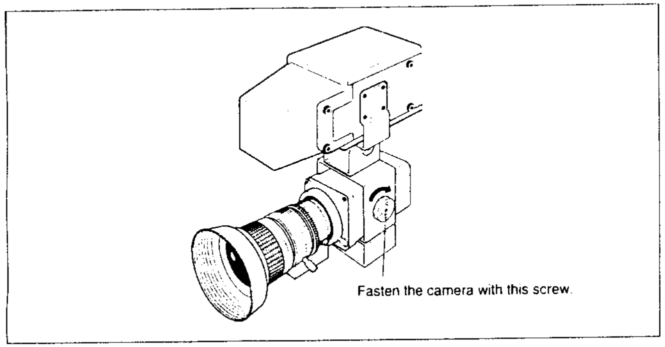
For landscape orientation

Attach the camera and viewfinder as follows when you want to take landscape orientation photos.


Fasten the camera with this screw.

For portrait orientation

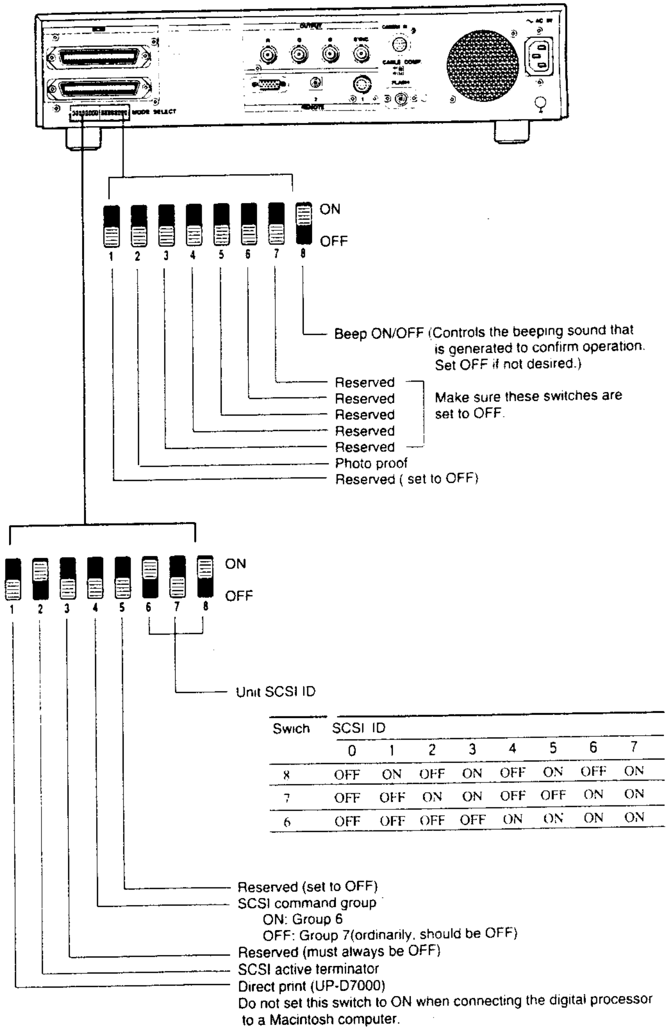
Attach the camera and viewfinder as follows when you want to take portrait orientation phots.


Fasten the camera with this screw.

Please refer to the instructions included with the VCT-S20 tripod adapter for how to attach the camera and viewfinder.

1-13. SETTING DIP SWITCHES

Two banks of DIP switches are located on the digital processor's rear panel. Functions of these switches are as explained below.


ON
OFF
1 2 3 4 5 6 7 8
Beep ON/OFF (Controls the beeping sound that is generated to confirm operation. Set OFF if not desired.)
Reserved
Reserved
Reserved
Reserved
Reserved
Make sure these switches are set to OFF.
Photo proof
Reserved (set to OFF)
ON
OFF
1 2 3 4 5 6 7 8
Unit SCSI ID
Reserved (set to OFF)
SCSI command group
ON: Group 6
OFF: Group 7(ordinarily, should be OFF)
Reserved (must always be OFF)
SCSI active terminator
Direct print (UP-D7000)
Do not set this switch to ON when connecting the digital processor to a Macintosh computer.

Swich	SCSI ID							
	0	1	2	3	4	5	6	7
8	OFF	ON	OFF	ON	OFF	ON	OFF	ON
7	OFF	OFF	ON	ON	OFF	OFF	ON	ON
6	OFF	OFF	OFF	OFF	ON	ON	ON	ON

Note

Before setting the DIP switches, turn off the power.

1-14. CHANGING THE CAMERA SETTING

Camera settings such as the color temperature conversion characteristic and electronic shutter speed are changed by means of menus that is displayed on the screen of the viewfinder or monitor. Two menus are used, the normal menu and the Set Up menu.

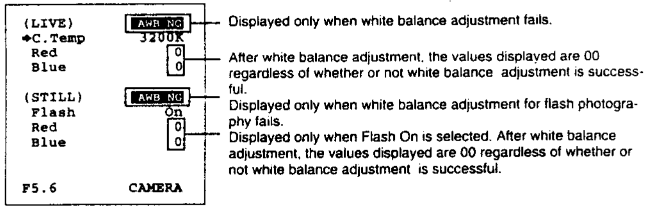
Normal menu

The normal menu is used for setting the camera's color temperature conversion characteristic, whether or not flash is used, and the RED and BLUE gain.

Notes

- When Flash is OFF: The C.Temp setting and Red and Blue gain are the same in the STILL mode as in the LIVE mode.
- When Flash is ON: The STILL mode's Red and Blue gain settings can be made independently of the LIVE mode. The STILL mode's C.Temp is automatically set to 5,600K, regardless of the LIVE mode C.Temp setting.

You can turn normal menu display on and off in the viewfinder and monitor by pressing the MENU button.



```
(LIVE)          AWB NG
♦C.Temp         3200K
 Red                0
 Blue               0

(STILL)         AWB NG
 Flash             On
 Red                0
 Blue               0


F5.6          CAMERA
```

Displayed only when white balance adjustment fails.
After white balance adjustment, the values displayed are 00 regardless of whether or not white balance adjustment is successful.
Displayed only when white balance adjustment for flash photography fails.
Displayed only when Flash On is selected. After white balance adjustment, the values displayed are 00 regardless of whether or not white balance adjustment is successful.

Meanings of the various parameters are as follows.

(LIVE):	Indicates that settings being made are for the LIVE mode.
(STILL):	Indicates that the settings being made are for the STDBY mode.
C.Temp:	Indicates the color temperature conversion characteristic. Available settings are 3200K and 5600K. (The 3200K setting is for use with tungsten lighting, and the 5600K setting is for use with sunlight and fluorescent light.)
Red:	Indicates the red gain setting. Ordinarily, this setting does not need to be changed once white balance has been adjusted as described later.
Blue:	Indicates the blue gain setting. Ordinarily, this setting does not need to be changed once white balance has been adjusted as described later.
Flash:	Select On to use the flash, or Off if the flash is not to be used.

Note

Flash Off cannot be selected when the photo proof mode is ON.

Procedures for changing the parameter settings are as follows.

1. Select the parameter to be changed.
   Pressing the FUNCTION UP button on the camera moves the arrow upward, and pressing the FUNCTION DOWN button moves the arrow downward. Move the arrow to the parameter you want to change. If a parameter has a fixed setting, the arrow skips over that parameter.
2. Set the desired value.
   You can change the value displayed by pressing the DATA UP and DATA DOWN buttons on the camera. Display the value desired.
3. Repeat steps 1 and 2 to change other parameters as desired.
4. Conclude parameter setting.
   Pressing the MENU button cancels menu display and concludes parameter setting.

Set Up menu

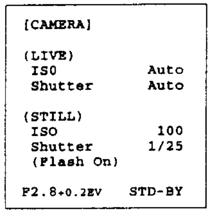
With no menu displayed, press and hold the camera's MENU button for at least 3 seconds to display the Set Up menu.
The Set Up menu has four setting screens. From any screen, pressing the MENU button cancels menu display.
When the arrow is at [SET-UP], you can change to the preceding (or following) SETUP screen by pressing the DATA UP or DATA DOWN button.

Procedures for setting the various parameters are as follows.

1. Select the parameter to be changed.
   Pressing the FUNCTION UP button on the camera moves the arrow upward, and pressing the FUNCTION DOWN button moves the arrow downward. Move the arrow to the parameter you want to change. If a parameter has a fixed setting, the arrow skips over that parameter.
2. Set the desired value.
   You can change the value displayed by pressing the DATA UP and DATA DOWN buttons on the camera. Display the value desired.
3. Repeat steps 1 and 2 to change other parameters as desired.
4. Conclude parameter setting.
   Pressing the MENU button cancels menu display and concludes parameter setting.

Set Up-Camera

This menu is used for displaying and setting the ISO and shutter speed to be used in the CAMERA mode.



```
[CAMERA]

(LIVE)
 ISO          Auto
 Shutter      Auto

(STILL)
 ISO           100
 Shutter      1/25
 (Flash On)

F2.8+0.2EV   STD-BY
```

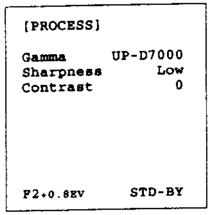
(LIVE):	Indicates that the settings being made are for the LIVE mode.
(STILL):	Indicates that the settings being made are for the STILL mode.
ISO:	Sets the ISO speed of the camera. Settings are 100, 200, 400, 800, and Auto (available only in the LIVE mode). When using an exposure meter with flash photography, set the iris after verifying the camera's ISO setting. Since you may need to change the ISO setting somewhat depending on photographic conditions, it is a good idea to check lighting with an exposure meter before taking pictures.
Shutter:	Determines the speed of the camera's electronic shutter. In the LIVE mode, available settings are from 1/25 to 1/10000 and Auto. In the STILL mode, available settings with Flash Off are 4 seconds to 1/10000. The speed is fixed to 1/25 when Flash On is selected in the normal menu.

Notes

- When the STILL mode shutter speed is set to 1/15 to 4 seconds, the actual amount of time required to grab an image after RELEASE is pressed is approximately twice the set value.
- When the STILL mode shutter speed is set to 1 second or more, the monitor displays "WAIT" when RELEASE is pressed.
- When the STILL mode shutter speed is set to 1/15 second or more, noise may appear in images grabbed into memory.

Set Up-Process

This menu is used for setting various characteristics of the digital processor and for turning camera W.Clip on or off.



```
[PROCESS]

Gamma       UP-D7000
Sharpness        Low
Contrast           0




F2+0.8EV      STD-BY
```

Gamma: Sets gamma compensation. Six settings are available as follows.

UP-D7000	Value suitable for the UP-D7000 printer	
ON	Value suitable for monitor display	
OFF	Linear response	
USER 1	User-defined value	Set from the computer. Factorysettings are the same as with ON.
USER 2	User-defined value	
USER 3	User-defined value	

Notes

- When using the UP-D7000 printer, the UP-D7000 setting provides smoothest representation of all shades from white to black. Use the ON mode when you want images with greater contrast.
- The OFF mode is provided to support connection to devices such as printers. The User1, User2, and User3 modes are provided to allow creation of original gamma compensation curves. (page 50)

Sharpness: Sets the degree of outline enhancement. Settings are OFF, Low, Mid, and High.

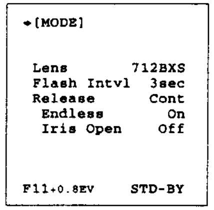
Notes

- The Sharpness setting cannot be changed during transfer of image data to the Macintosh or UP-D7000.
- Since this setting only pertains to sharpness enhancement, changing it does not affect the image appearing on the monitor.

Contrast: Sets the image contrast. Settings are from −127 to +127. The greater the value, the stronger the contrast.

Set Up-Mode

This menu is used for making other settings.



```
◆[MODE]


 Lens          712BXS
 Flash Intvl    3sec
 Release        Cont
  Endless         On
  Iris Open      Off



F11+0.8EV     STD-BY
```

These two items do not appear when the release mode selected is Single.

Lens: Use this parameter to indicate whether the lens being used is one made especially for this system (the VCL-712BXS zoom lens) or some other lens. Available settings are 712BXS and Others.

The iris setting changes as indicated below according to whether you are using the VCL-712BXS or an other lens.

712BXS:	CLOSE to F1.4 (in 0.2-EV steps)
Others:	0 to 51 (where 0 is fully closed and 51 is fully open)

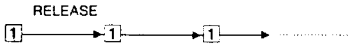
Flash Intvl: This parameter determines the interval (in seconds) at which the flash is triggered when adjusting white balance for flash photography. Settings are 3, 5, 7, and 10 seconds. Select a value according to the capacity of your flash's charger.

Note

Please note that automatic adjustment will not work properly unless the set flash interval exceeds the charging time of the flash.

Release: Determines whether or not the selected memory is switched automatically when the RELEASE button is pressed.

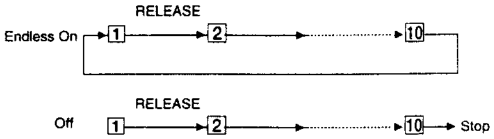
Single: With this setting, the image grabbed upon pressing the RELEASE button is stored in the currently selected memory, and the selected memory does not change. Therefore, each time you press the RELEASE button, the image contained in the currently selected memory is replaced with a new one.



Note

The SINGLE mode cannot be selected while in the photo proof mode.

Cont: With this setting, the currently selected memory is incremented by one after image grabbing. Thus, each time the RELEASE button is pressed, the image grabbed is stored in a different memory. Operation when the highest memory number is reached differs according to the setting of the Endless parameter.



Endless: Determines the memory switching method.

On: With this setting, memory switching is cyclic. That is, memory 1 follows memory 2 (memory 10 if the DKB-5008 is installed) when you press the RELEASE button the + button.

Off: With this setting, memory switching stops when the highest memory is reached. In other words, memories are not switched if the RELEASE button or + button is pressed when the highest memory is selected. A beep sounds and the monitor displays "End of Mem." when an image is grabbed into the highest memory.

Iris Open: Determines the state that follows pressing of the RELEASE button in the continuous (Cont) mode.

On: Select this setting while using continuous photography when you want to remain in the CAMERA mode until you press the RELEASE button. (This setting is useful when you need to confirm picture composition on the monitor or viewfinder prior to each shot.)

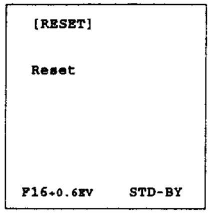
Off: Select this setting while using continuous photography when you want the camera to wait in the STDBY mode between exposures. This setting is useful when release timing is critical.

Note

The Iris Open mode cannot be turned Off while in the Photo Proof mode.

Set Up-Reset

This menu is used for restoring parameters to the factory settings.



[RESET]

Reset

F16+0.6EV   STD-BY

Reset:	Move the cursor to Reset, then press the DATA UP or DATA DOWN button to restore all parameters to the factory settings. The factory settings are as follows.

Display mode:	CAMERA
Focus:	Center
Zoom:	WIDE
Iris:	F5.6

- Nomal menu

(LIVE)	C.TEMP:	3200K
	Red:	0
	Blue:	0
(STILL)	Flash:	On
	Red:	0
	Blue:	0

- SET UP menu

(CAMERA)			
	(LIVE)	Iso:	AUTO
		Shutter:	AUTO
	(STILL)	Iso:	100
		Shutter:	1/25
(PROCESS)		Gamma:	UP-D7000
		Sharpness:	Low
		Contrast:	0
(MODE)		Lens:	VCL-712BXS
		Flash Intvl:	3 sec
		Release:	Single

Note

When Photo Proof is On, Cont is selected, Endless is Off, and Iris Open is On.

(PRINT)	Layout:	Full

1-15. USING THE SOFTWARE

The Photoshop plug-in module included with the DKC-5000 provides four control panels as follows.

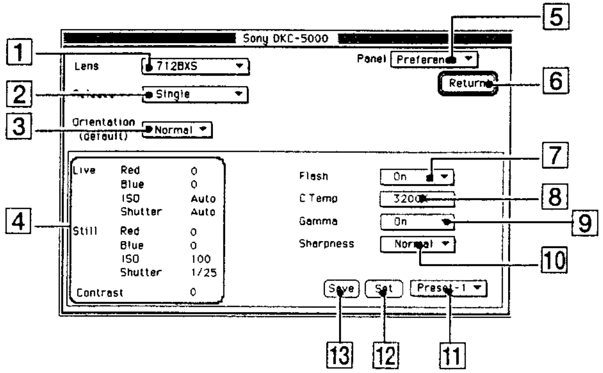
- Preferences panel
  This panel is used for setting up the camera and digital processor operating parameters.
- Table Selection panel
  This panel is used for selecting the digital processor's look-up table (camera or monitor).
- Image Information panel
  Sets frame memory information display and the crop area. Also used for transferring image data to Photoshop.
- Image List panel
  This panel shows miniatures of images contained in frame memory. It is also used for transferring multiple images to Photoshop.

Switching between control panels is done by means of the Panel menu at upper right. The menus of individual panels and functions of buttons in the panels are explained below.

Functions of Panels

Preferences panel

The following panel appears when you select "Preferences" in the panel menu.



Sony DKC-5000

Lens 712BXS

Single

Orientation (default) Normal

Panel Preferen

Live Red 0
Blue 0
ISO Auto
Shutter Auto
Still Red 0
Blue 0
ISO 100
Shutter 1/25
Contrast 0

Flash On
C Temp 3200K
Gamma On
Sharpness Normal

Preset-1

Functions of the menus and buttons in this panel are as follows.

1 Lens menu

Specifies the type of lens being used with the camera. You can select either 712BXS or Others. This is the same as the camera Set Up-Mode menu.

2 Release menu

Specifies the release mode of the camera when using the remote control unit.

3 Grab direction (default) menu

Specifies the default setting for the direction of image grabbing.

4 Parameter display box

Displays the camera operating parameters.

5 Panel menu

Specifies the type of control panel to be displayed.

6 [Return] button

Returns display to the previous panel.

7 Flash menu

Turns the flash on or off. Settings are the same as with the Flash parameter in the camera normal menu.

8 C.Temp menu

Specifies the color temperature during live display. Settings are the same as with the C.Temp parameter in the normal camera menu.
You can select either 5600K or 3200K.

9 Gamma menu

Specifies the Gamma table to be used. Settings are the same as with the Gamma parameter in the camera's Set Up-Process menu.
Settings available are UP-D7000, ON, OFF, USER 1, USER 2, and USER 3.

UP-D7000	Value suitable for the UP-D7000 printer
ON	Value suitable for monitor display
OFF	Linear response
USER 1	User-defined value
USER 2	User-defined value
USER 3	User-defined value

10 Sharpness menu

Specifies the degree of sharpness. This is the same as the camera Set Up-Process menu.

11 Parameter setting menu

Used for selecting the camera operating parameter number. Values available are from 1 to 5.

12 [Set] button

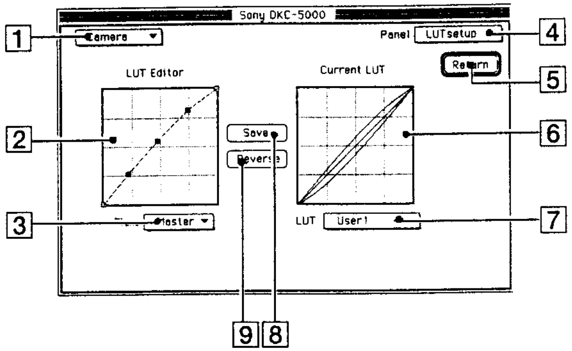
Used for setting operating parameters selected in the parameter setting menu to the digital processor.

13 [Save] button

Used for saving the DKC-5000 camera control parameters. Parameters numbered 1 to 5 in the parameter setting menu can be saved.

Table Settings panel

The following panel appears when you select "Table Settings" in the Panel menu.



The menus and buttons in this panel are as follows.

1 Camera/Monitor menu

Specifies the type of look-up table to be used.
Allows selection of the Camera (input) and Monitor (output).

Possible LUT combinations
Six pre-determined LUT combinations of input (Camera) and output (Monitor) are provided as follows.

LUT	Input	Output
Gamma	(Camera)	(Monitor)
UP-D7000	Fixed	Fixed
ON	Fixed	Fixed
OFF	Fixed	Fixed
User 1	Arbitrary	Arbitrary
User 2	Arbitrary	Arbitrary
User 3	Arbitrary	Arbitrary

Two LUTs are used, one for input (Camera) and one for output (Monitor). The input LUT is used for adjusting the tone of the input signal from the camera. The output LUT is used for adjusting coloration of output to suit a Macintosh display or printer.
The User LUTs make it possible for the user to use the Macintosh to define any desired curves for input and output.
Upon shipment from the factory, the curves set in User 1, 2, and 3 are all the same as the Gamma: ON curves. These settings are maintained for about 10 years even when the power is turned off. The settings can be re-written approximately 10,000 times. ("Digital processor block diagram" page 60)

2 **LUT editor**

Allows arbitrary curves to be created by moving 5 points with the mouse.

3 **Plane menu**

Specifies the LUT (look-up table) plane.

Allows selection of Master, R, G, or B. When Master is specified, R, G, and B all have the same curve.

4 **Panel menu**

Specifies the type of control panel to be displayed.

5 **[Return] button**

Returns display to the previous panel.

6 **LUT display box**

Displays the user-defined table specified in the LUTmenu.

7 **LUT menu**

Specifies the number of the user defined table.

Selections available are User 1, User 2, and User 3.

8 **[Save] button**

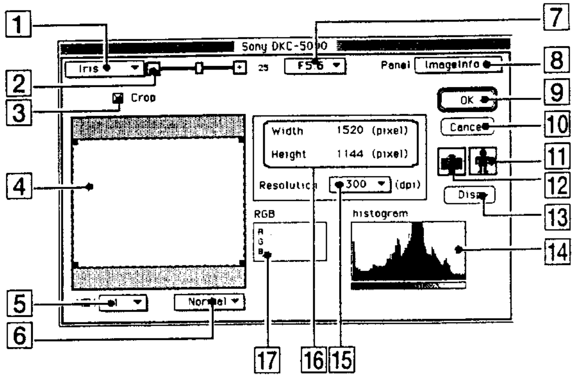
Saves the curve created with the LUT editor to the user-defined table specified in the LUT menu.

9 **[Reserve] button**

Flips (inverts) and saves the user-defined table specified from the LUT menu.

Image information panel

The following panel appears when you select Image Information in the Panel menu.



Width 1520 (pixel)

Height 1144 (pixel)

Resolution 300 (dpi)

Functions of the menus and buttons in this panel are as follows.

1 **Camera control menu**

Displays control bars for specifying the camera control type.

2 **Camera control bars**

Used for specifying a variety of camera control values.

3 **Crop check box**

Turns the cropping function on or off.

4 **Miniature display box**

Displays the contents of the selected memory.

When the mouse cursor is located on top of the miniature display, values appear in the RGB indicator box.

When the cropping function is turned on, the crop area is displayed and the size and position of the cropping area can be specified with the mouse.

5 **Memory selection menu**

Used for specifying the image memory number.

6 **Rotation selection menu**

Specifies the direction of image rotation. Selections are None, Rotate right, and Rotate left.

7 **Iris menu**

Specifies the camera's iris setting (F number). This menu is valid only when using the DKC-5000's special lens, the VCL-712BXS.

[8] **Panel menu**
Specifies the type of control panel.

[9] **[OK] button**
Initiates transfer of image data to Photoshop. Only the image selected in the MEM menu is transferred.

[10] **[Cancel] button**
Cancels operation of the input module.

[11] **MONITOR button [🧍]**
Switches the display mode (CAMERA/STANDBY) of the monitor.

[12] **SHOOT button [📷]**
Grabs an image into frame memory. This performs the same function as the camera's RELEASE button.

[13] **[Disp] button**
Redisplays the miniature images.

[14] **Histogram display box**
Displays a histogram of data in the selected image memory.

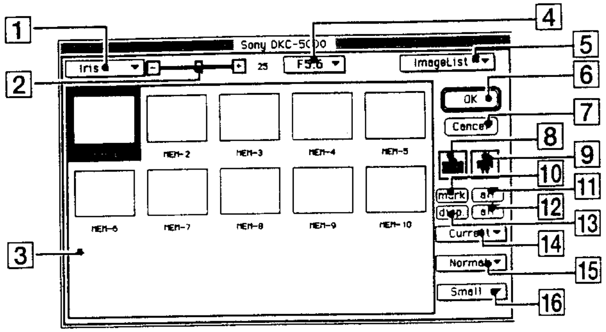
[15] **Resolution menu**
Indicates the resolution of the image.

[16] **Image size indicator box**
Displays the image size.

[17] **RGB indicator box**
Displays the RGB values of the location in the image at which the mouse cursor is located. (Effective only when using full-color display.)

Image list panel

The following panel appears when you select Image List in the Panel menu.



The panel shown above is the one that appears when the DKB-5008 is installed.

Functions of the menus and buttons in this panel are as follows.

[1] **Camera control menu**
Displays control bars for specifying the camera control type.

[2] **Camera control bars**
Used for specifying a variety of camera control values.

[3] **Image list**
Displays contents of memory as miniature images.
You can select a memory by clicking on the corresponding miniature with the mouse.

[4] **Iris menu**
Specifies the camera's iris setting (F number). This menu is valid only when using the DKC-5000's special lens, the VCL-712BXS.

[5] **Panel menu**
Specifies the type of control panel.

[6] **[OK] button**
Initiates transfer of image data to Photoshop. All marked images are transferred.

[7] **[Cancel] button**
Cancels operation of the input module.

[8] **SHOOT button [📷]**
Grabs an image into the selected memory. With the Single mode, grabbing an image does not change the selected memory. Release timing is not determined by the settings in the Preferences menu.

9 MONITOR button [ ]
Switches the display mode of the monitor to CAMERA or STANDBY.

10 [mark] button
Marks images for transfer.

11 Mark [all] button
Marks all images for transfer.

12 Display [all] button
Re-displays all images in frame memory.

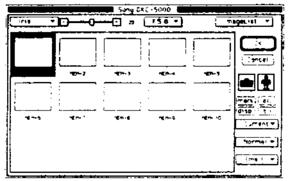
13 [Disp] button
Re-displays the image in the selected memory.

14 Memory select menu
Selects the memory selection method used during photography. Choices available are "Don't Move" and "Move". When you select "Move", selection changes to the next memory after release using the SHOOT button.

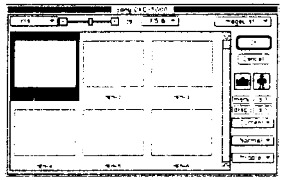
15 Rotation selection menu
Selects the direction of image rotation. Selections are None, Rotate right, and Rotate left.

16 Miniature image selection menu
Selects the size of miniature images. Selections available are Small, Medium, and Large.

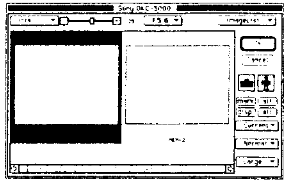
Small miniatures



Medium miniatures



Large miniatures



1-16. MESSAGES

Meanings of ordinary messages and error messages are as follows.

Memory mesages	Meaning/remedy
End of Mem	Indicates that images have been grabbed into all available memories, and that no further photos can be taken. Displayed when the RELEASE mode is Cont and Endless is set OFF.
No Free Mem	Displayed in the Cont RELEASE mode when no memory is available for grabbing images. When the Endless RELEASE mode is ON, appears when all memories are marked with X. When the Endless RELEASE mode is OFF, appears when all memories following the last one containing image data are marked with X.
Protected	An attempt was made to grab an image into a memory that has an X mark displayed beside it in the mode display. Select a different memory.

Printer Messages	Meaning/remedy
Printer Not Found	The UP-D7000 was not found. Check that its power is turned on and that its SCSI connections are properly made. (page 37)
Printer Not Ready	The UP-D7000 is not ready to print. If it is not already printing, check whether the printer is out of paper or ribbon.
Printer Error	An error occurred during transfer of image data to the UP-D7000. Turn the UP-D7000's power off momentarily, then try again.
Empty Mem	An attempt was made to print out the contents of a memory that does not contain any image.

Photo proofing messages	Meaning/remedy
Push [RELEASE]	Displayed when in the Photo Proof mode if the time lag has not been set, or the time lag set has been reset. Train the digital processor for the shutter time lag by pressing the RELEASE button.(page 34)
OK	The shutter time lag has been properly stored.
PC ERROR	No signal is present at the PC IN connector. Check the main camera connections.(page35)
SYNCHRO ERROR	Image grabbing could not be synchronized with the main camera. Check the status of the main camera.

Self-diagnostic messages	Meaning/remedy
SELF TEST	Self test execution in progress. Wait until execution is completed. *The self test cannot be executed unless a SCSI command is used.
OK	No malfunction detected.
NG	Malfunction detectead.

Other messages	Meaning/remedy
WAIT	Processing in progress will take a moment. Wait for completion.
NO SYNC	No video signal is being received from the camera. Check the camera connections. (pages 33 and 36)
Remote	The RM-930's CAMERA/REMOTE switch is set to REMOTE. In order to control operation from the camera, you must either set the CAMERA/REMOTE switch to CAMERA (page 68), or disconnect the RM-930.

1-17. TROUBLESHOOTING

Check before calling for service. If the equipment does not function as expected, please review the following checklist for symptoms and possible causes and remedies. If you cannot solve the problem or the trouble reoccurs, contact your Sony dealer for assistance.

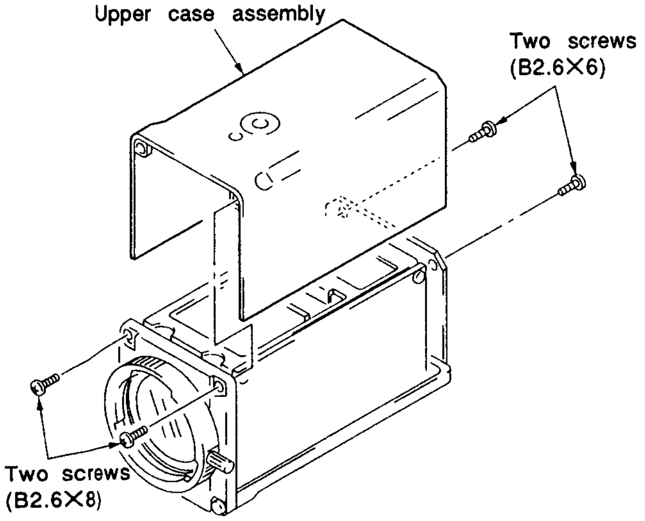
Symptom	Cause/remedy
Power will not go on.	Make sure that the power cord is plugged in securely. (page 36)
Buttons on the RM-S72 do not work.	Make sure that the cable is securely connected. (pages 36 and 63)
Photo images taken are blurred.	Blurring occurs when photographing fast-moving subjects. This is not a problem with the equipment.
Images from the camera are not clear.	Check whether the CABLE COMP switch is correctly set. (page 65)
The appearance of the monitor image does not change when you change the camera settings.	Is the monitor displaying an image in memory?
The PRINT menu does not appear when you press the PRINT key.	• Is display in the MEMORY mode? • Have you already started printing? • Are the DIP switches set correctly?
Changing the iris setting does not affect the iris of the lens.	• Is display in the STAND BY mode? • Is the lens aperture switch set to AUTO?
When you bring an image from memory into the computer, the gradations appearing differ markedly from those shown by the monitor.	Is Gamma set to On? With Gamma settings other than On, the monitor LUT is adjusted so that display of gradations by the monitor is optimized for images displayed from memory. Accordingly, gradations of images displayed from memory may differ from those displayed by the monitor.
Gradations of images grabbed into memory look strange on the monitor.	Did you change the Gamma setting after taking the photographs? As indicated above, use of different Gamma settings during photography and display from memory will cause the appearance of images to change on the monitor.
When taking photographs in the Flash On mode, the screen flickers momentarily while the image is being grabbed.	This is not a malfunction.
The color temperature of LIVE images sometimes varies under fluorescent lighting.	This is not a malfunction. What is happening is that the electronic shutter is responding to periodic variations in light level from the fluorescent lighting. This is not a malfunction. Although this phenomenon does not present a problem when using flash, the best way to avoid it with Flash Off is to use tungsten lighting to the maximum extent possible.
Even when settings are changed, the dynamic range of image data transferred to the computer does not extend over the full range from 0 to 255.	Specifications of the A/D conversion circuit are actually for a dynamic range of somewhat less than 0 to 255.
Unable to correctly reassemble pieces of an image on the computer after using the cropping function to send that image to the computer a piece at a time.	The sharpness enhancement function causes variations at dot boundaries that prevent this method from working properly.

SECTION 2
DISASSEMBLY

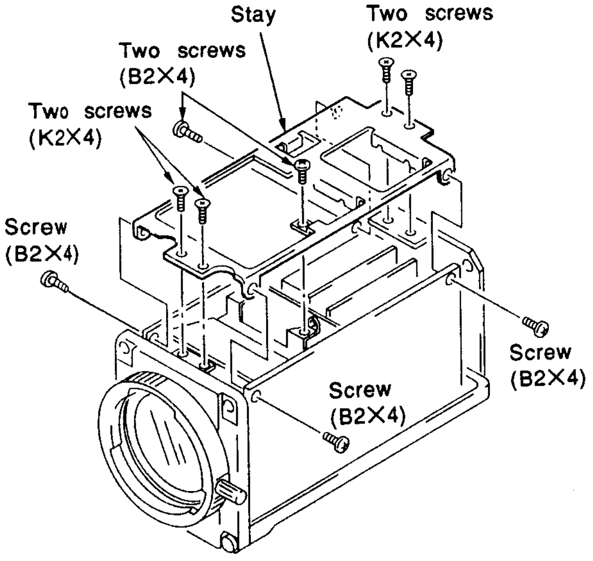
Camera Section

2-1. REMOVAL OF UPPER CASE ASSEMBLY AND STAY

1. Remove four screws and remove the upper case assembly.

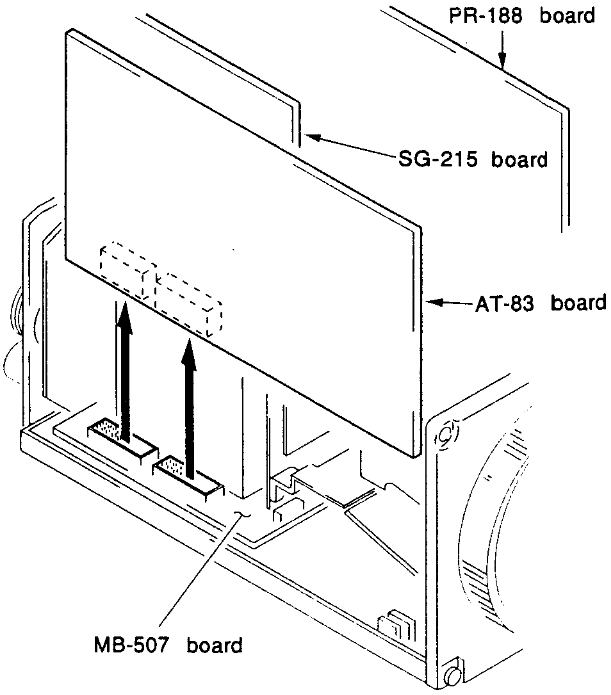

Upper case assembly
Two screws
(B2.6X6)
Two screws
(B2.6X8)

2. Remove nine screws and remove the stay.

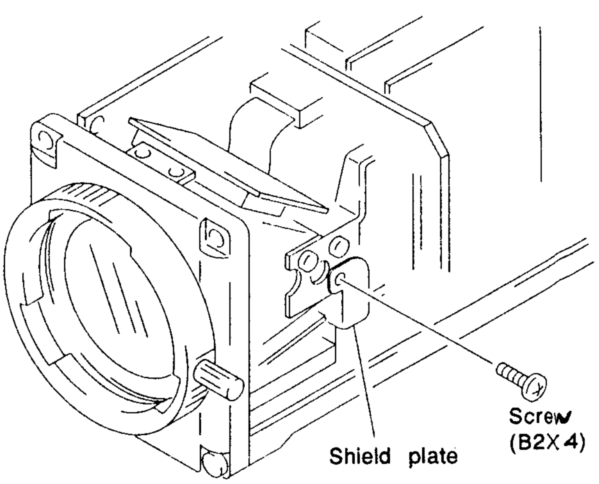

Stay
Two screws
(K2X4)
Two screws
(B2X4)
Two screws
(K2X4)
Screw
(B2X4)
Screw
(B2X4)
Screw
(B2X4)

2-2. REMOVAL OF CCD BLOCK ASSEMBLY

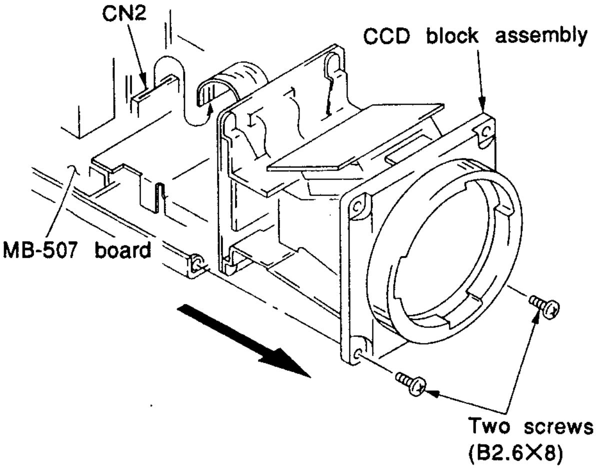
1. Remove the upper case assembly and stay in the same procedure of 2-1.
2. Pull out the PR-188, GS-215 and AT-83 boards from the MB-507 board.


PR-188 board
SG-215 board
AT-83 board
MB-507 board

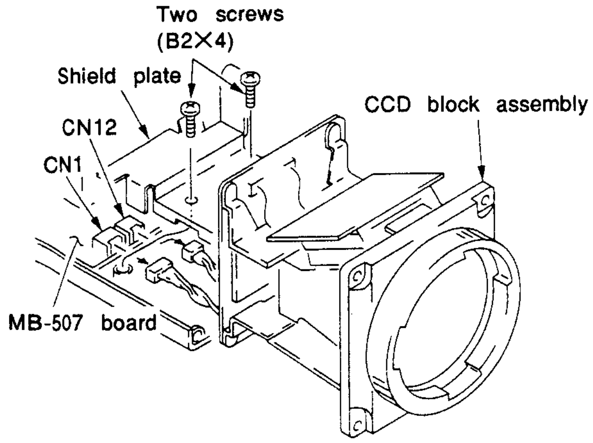
3. Remove a screw.


Screw
(B2X4)
Shield plate

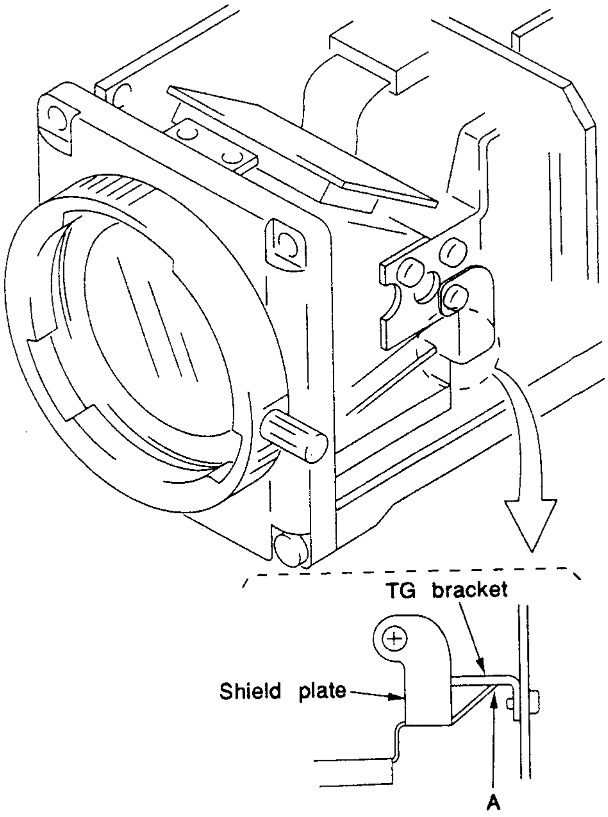
4. Remove two screws and pull out the CCD block assembly.
5. Disconnect CN2 on MB-507 board.


CN2
CCD block assembly
MB-507 board
Two screws
(B2.6X8)

6. Remove two screws and remove the shield plate. Disconnect CN1 and CN12 and remove the CCD block assembly.

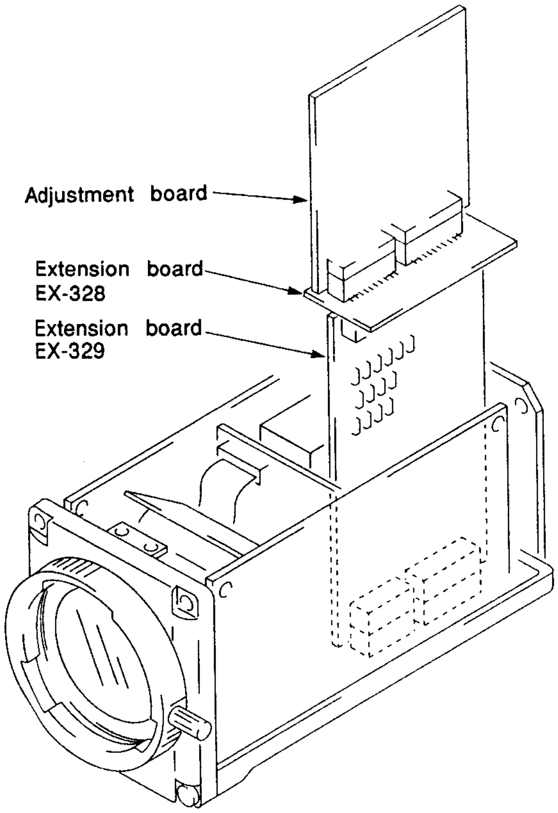

Two screws
(B2X4)
Shield plate
CN12
CN1
CCD block assembly
MB-507 board

<Caution during shield plate installation>
After the CCD block was replaced, confirm that the bracket touches the shield plate(portion A) when the shield plate is installed.

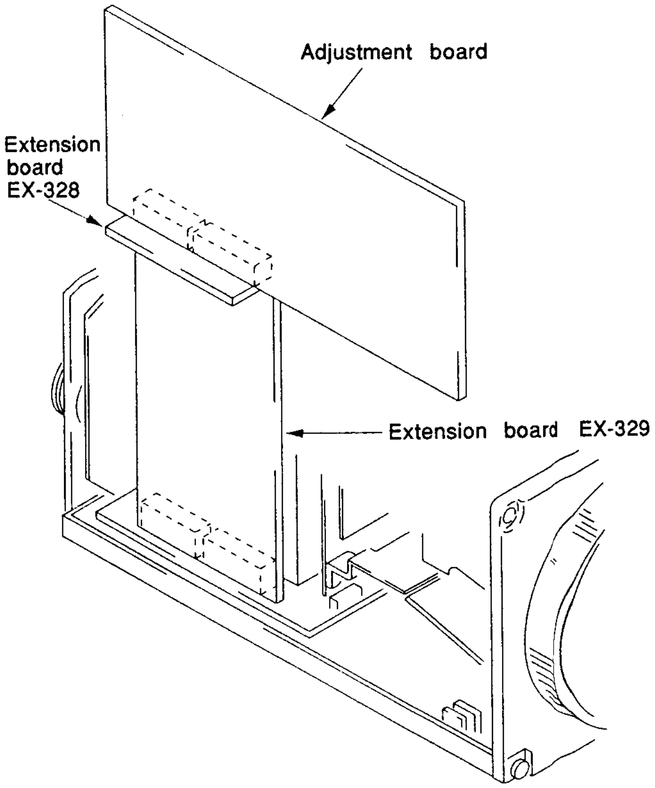

TG bracket
Shield plate
A

2-3. EXTENSION BOARD

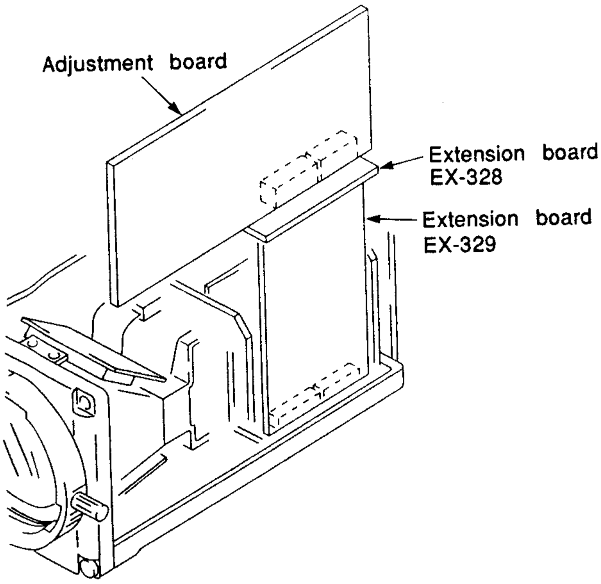
- SG-215 Board


Adjustment board
Extension board EX-328
Extension board EX-329

- AT-83 Board

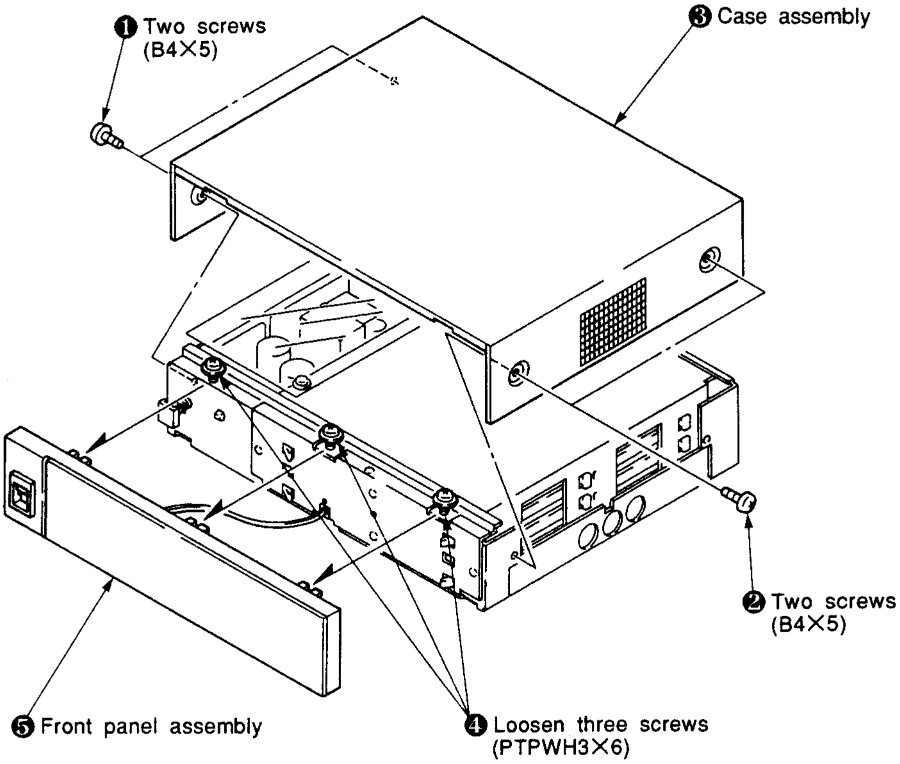

Adjustment board
Extension board EX-328
Extension board EX-329

- PR-188 Board

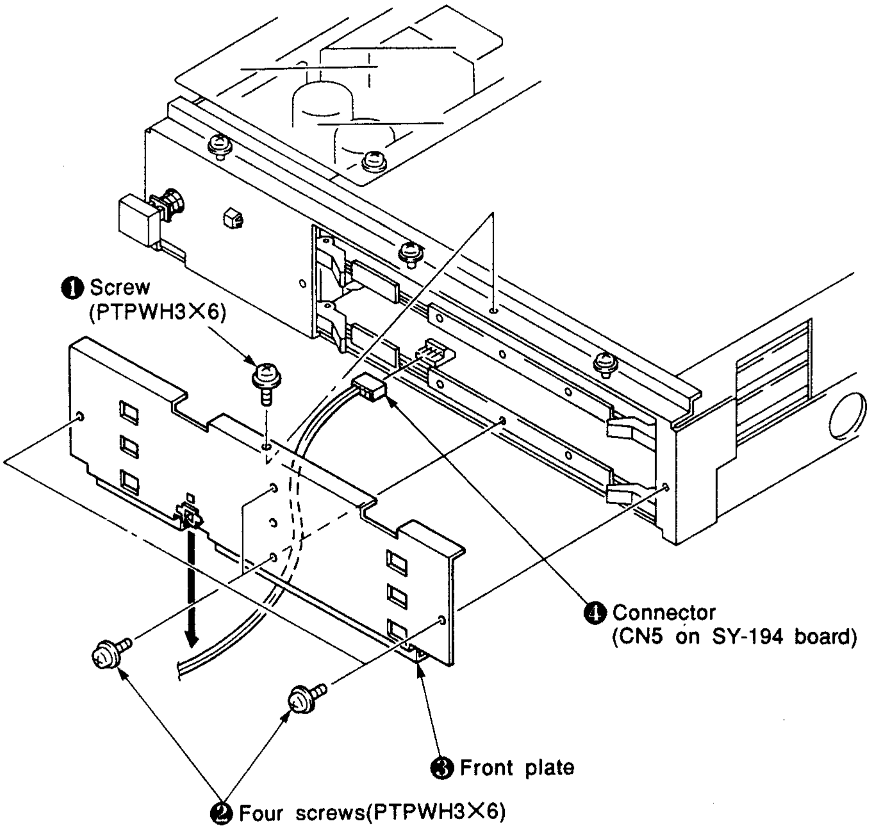

Adjustment board
Extension board EX-328
Extension board EX-329

Processor Section

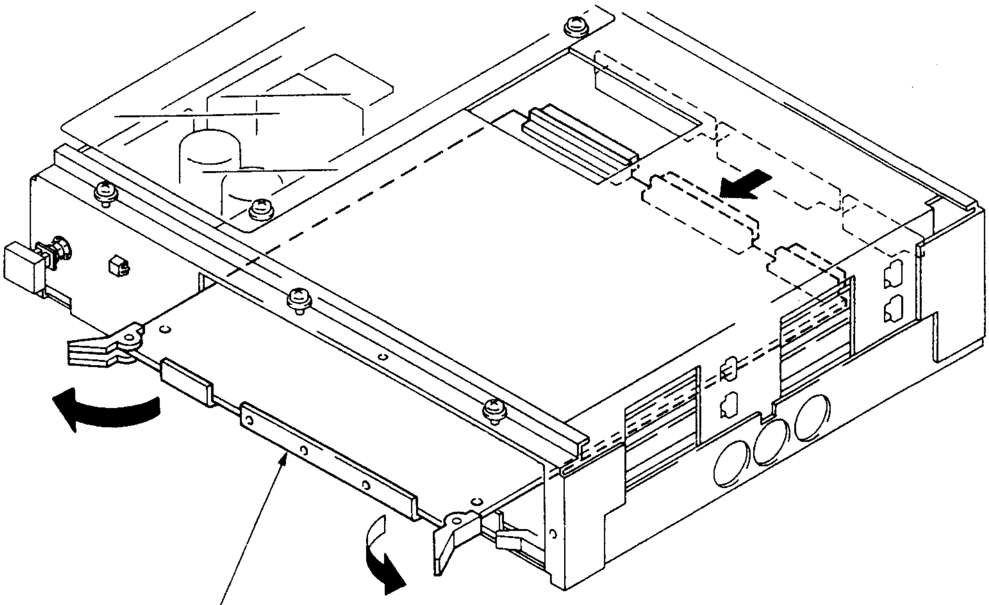
2-4. REMOVAL OF CASE ASSEMBLY AND FRONT PANEL ASSEMBLY


❶ Two screws (B4×5)
❸ Case assembly
❷ Two screws (B4×5)
❺ Front panel assembly
❹ Loosen three screws (PTPWH3×6)

2-5. REMOVAL OF FRONT PLATE

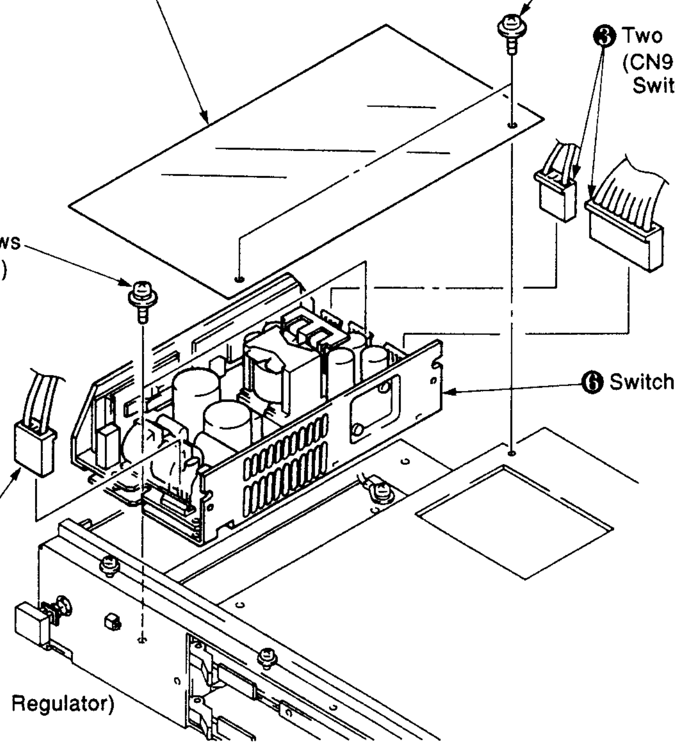

❶ Screw (PTPWH3×6)
❹ Connector (CN5 on SY-194 board)
❸ Front plate
❷ Four screws(PTPWH3×6)

2-6. REMOVAL OF ADA-33, SY-194 BOARDS



❶ Remove the ADA-33 board in the direction of arrow. (SY-194 board → Same here.)

2-7. REMOVAL OF SWITCHING REGULATOR



❶ Screw(PTPWH3×6)

❷ Rerulator cover

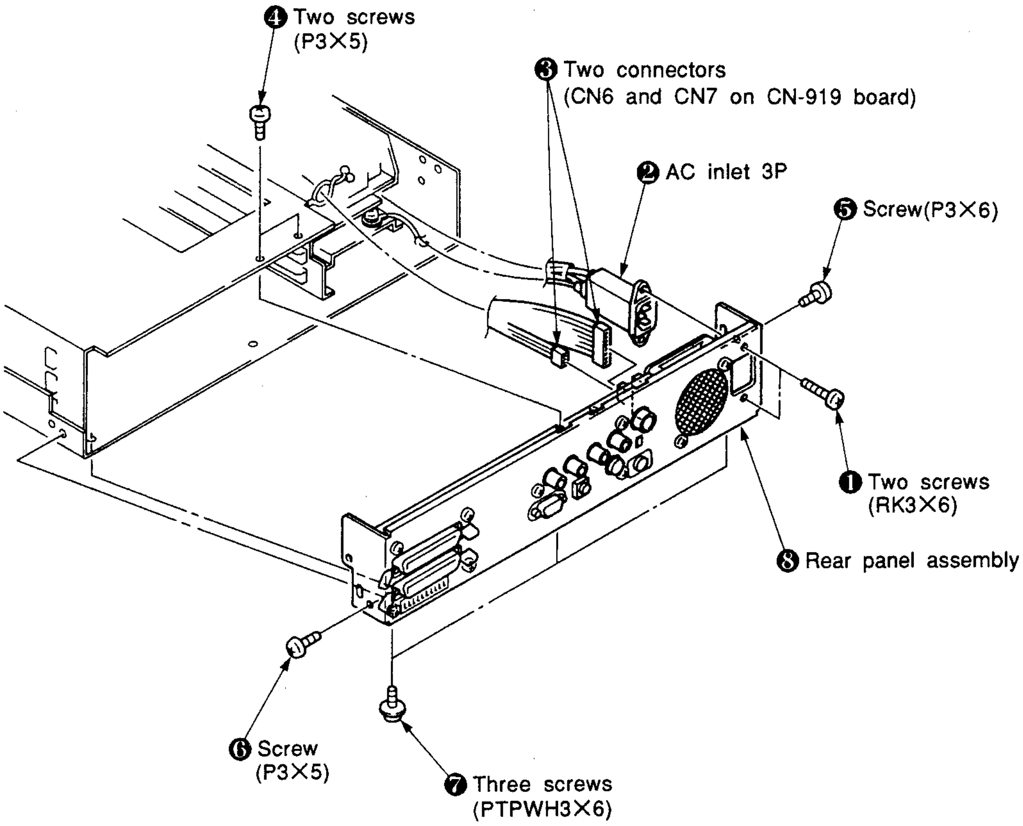
❸ Two connectors (CN9 and CN6 on Switching Regulator)

❹ Connector (CN1 on Switching Regulator)

❺ Two screws (PSW4×8)

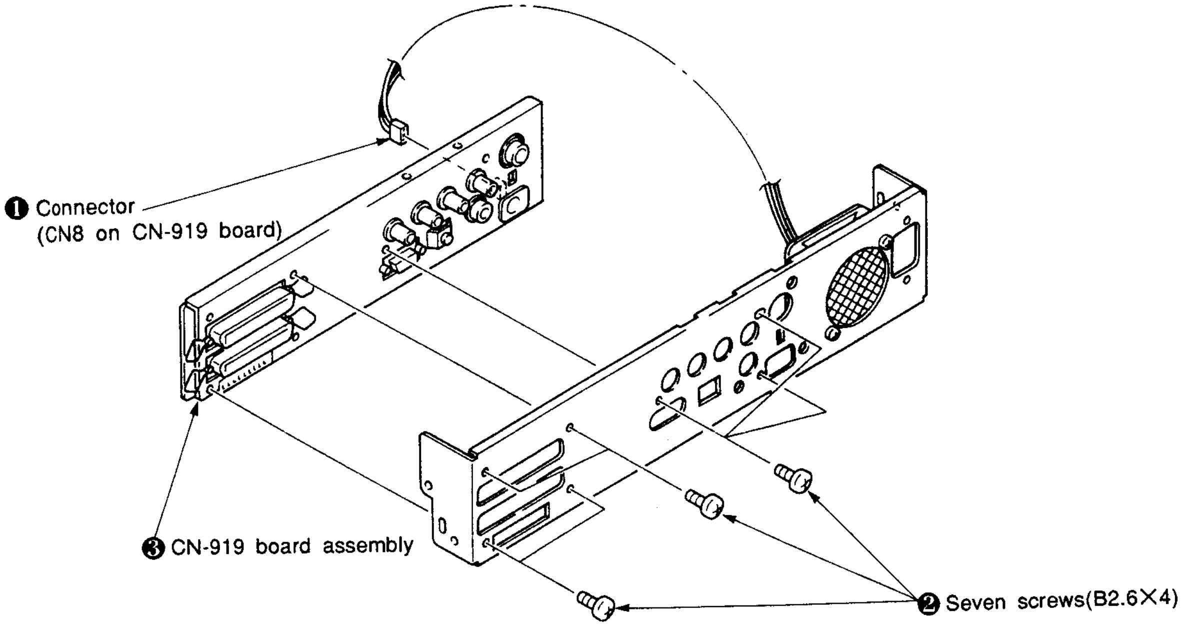
❻ Switching Regulator

2-8. REMOVAL OF REAR PANEL ASSEMBLY



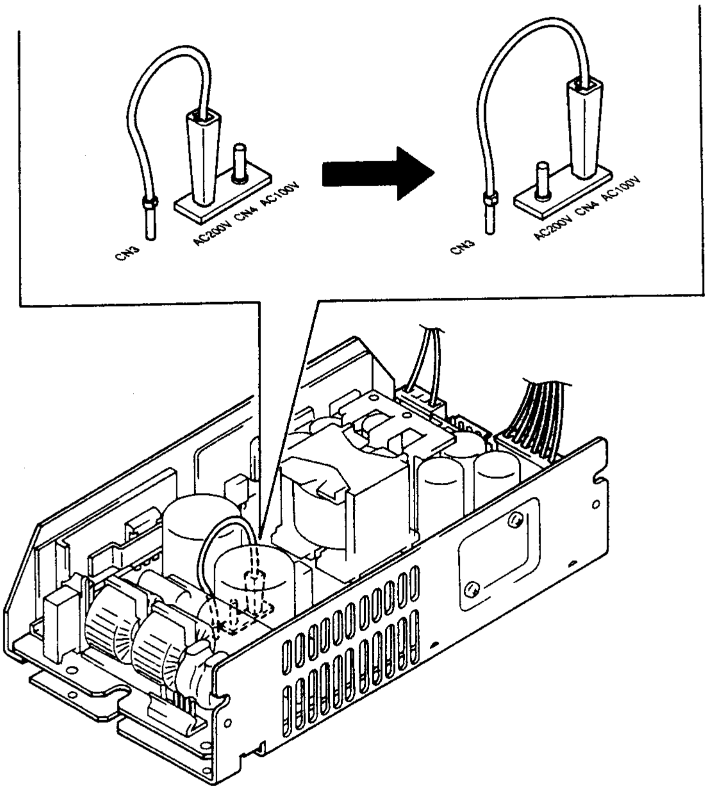
❹ Two screws (P3X5)
❸ Two connectors (CN6 and CN7 on CN-919 board)
❷ AC inlet 3P
❺ Screw(P3X6)
❶ Two screws (RK3X6)
❽ Rear panel assembly
❻ Screw (P3X5)
❼ Three screws (PTPWH3X6)

2-9. REMOVAL OF CN-919 BOARD



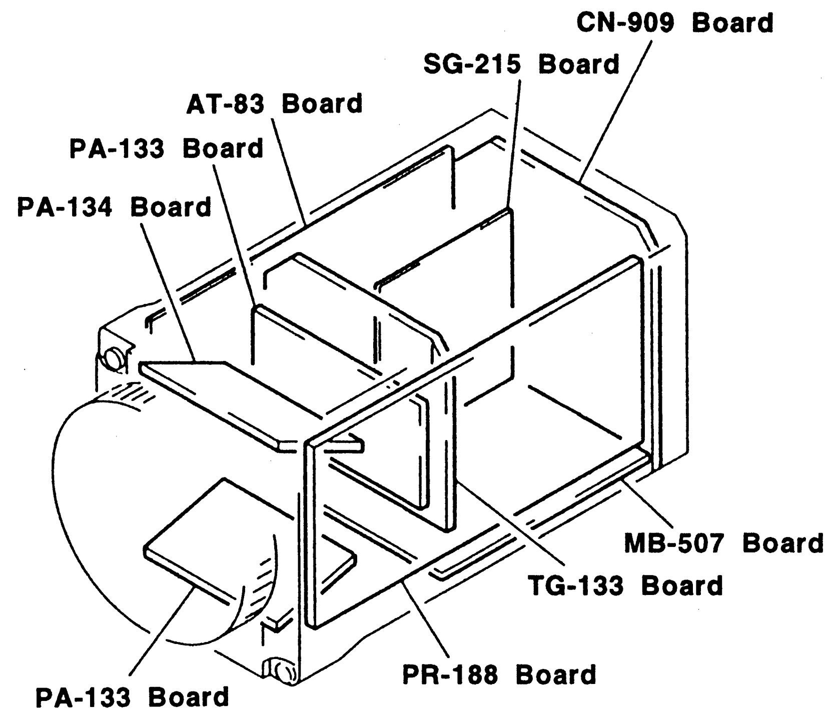
❶ Connector (CN8 on CN-919 board)
❸ CN-919 board assembly
❷ Seven screws(B2.6X4)

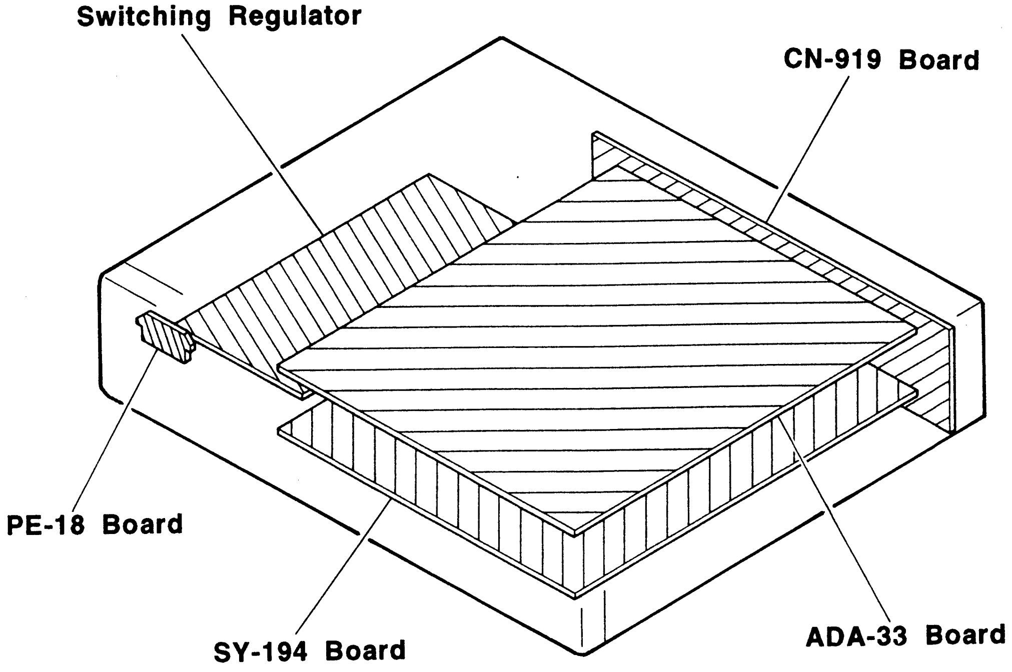
Caution during power supply block replacement
Be sure to reinsert the connector(CN4) pin into the operation voltare side when replacing the power block assembly.


CN3
AC200V
CN4
AC100V
CN3
AC200V
CN4
AC100V

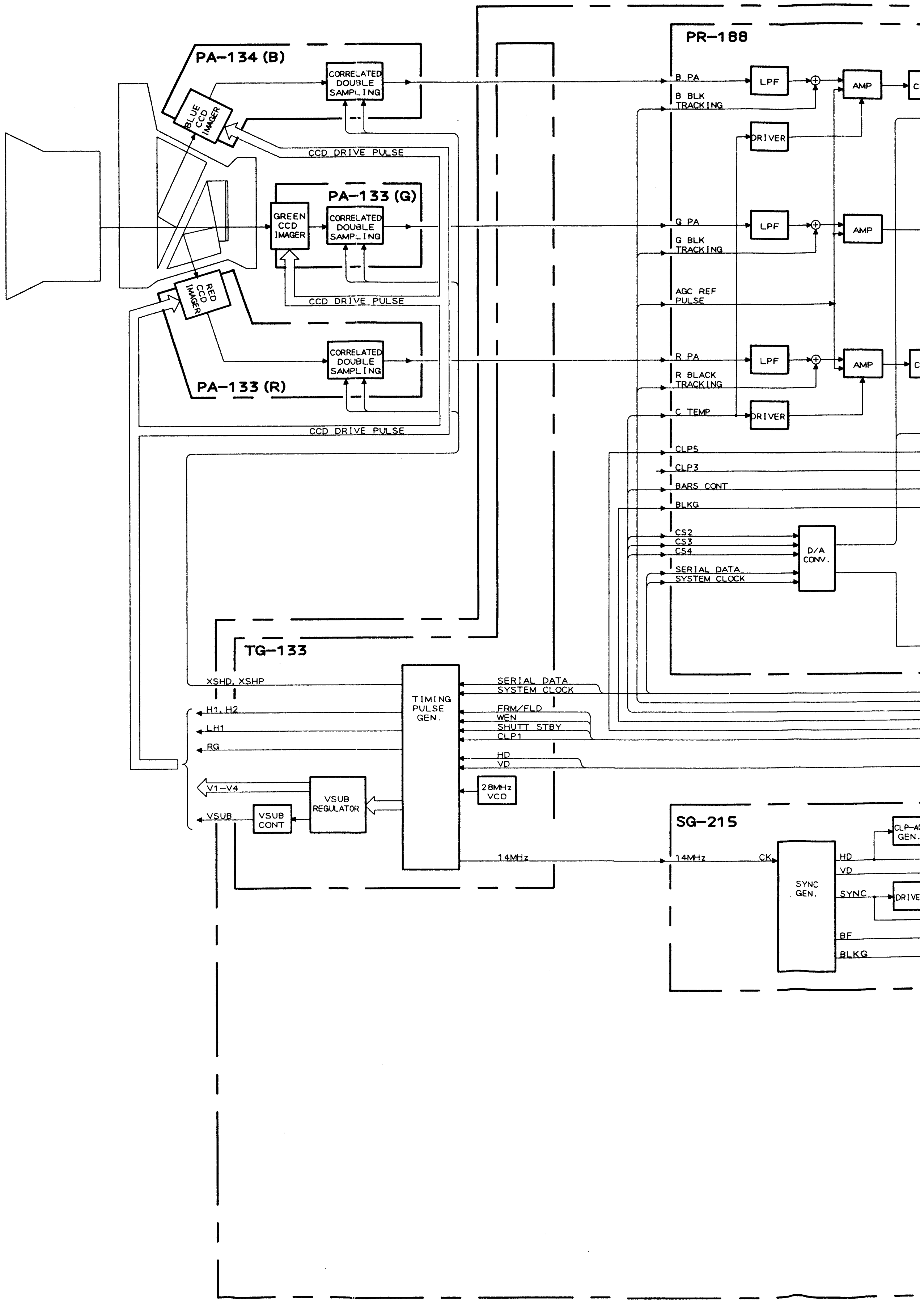
SECTION 3
DIAGRAMS

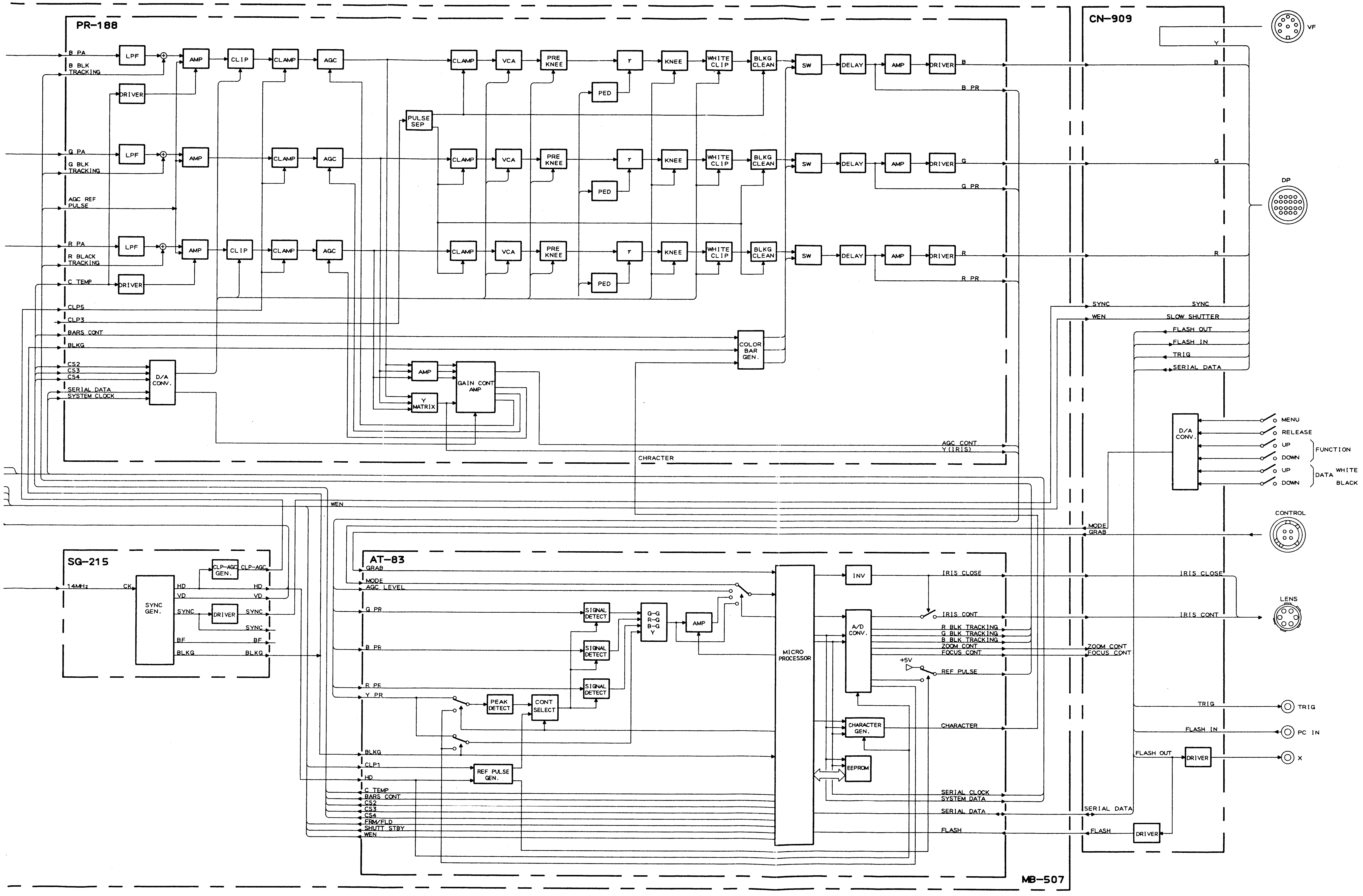
3-1. CIRCUIT BOARDS LOCATION


CN-909 Board
SG-215 Board
AT-83 Board
PA-133 Board
PA-134 Board
MB-507 Board
TG-133 Board
PR-188 Board
PA-133 Board

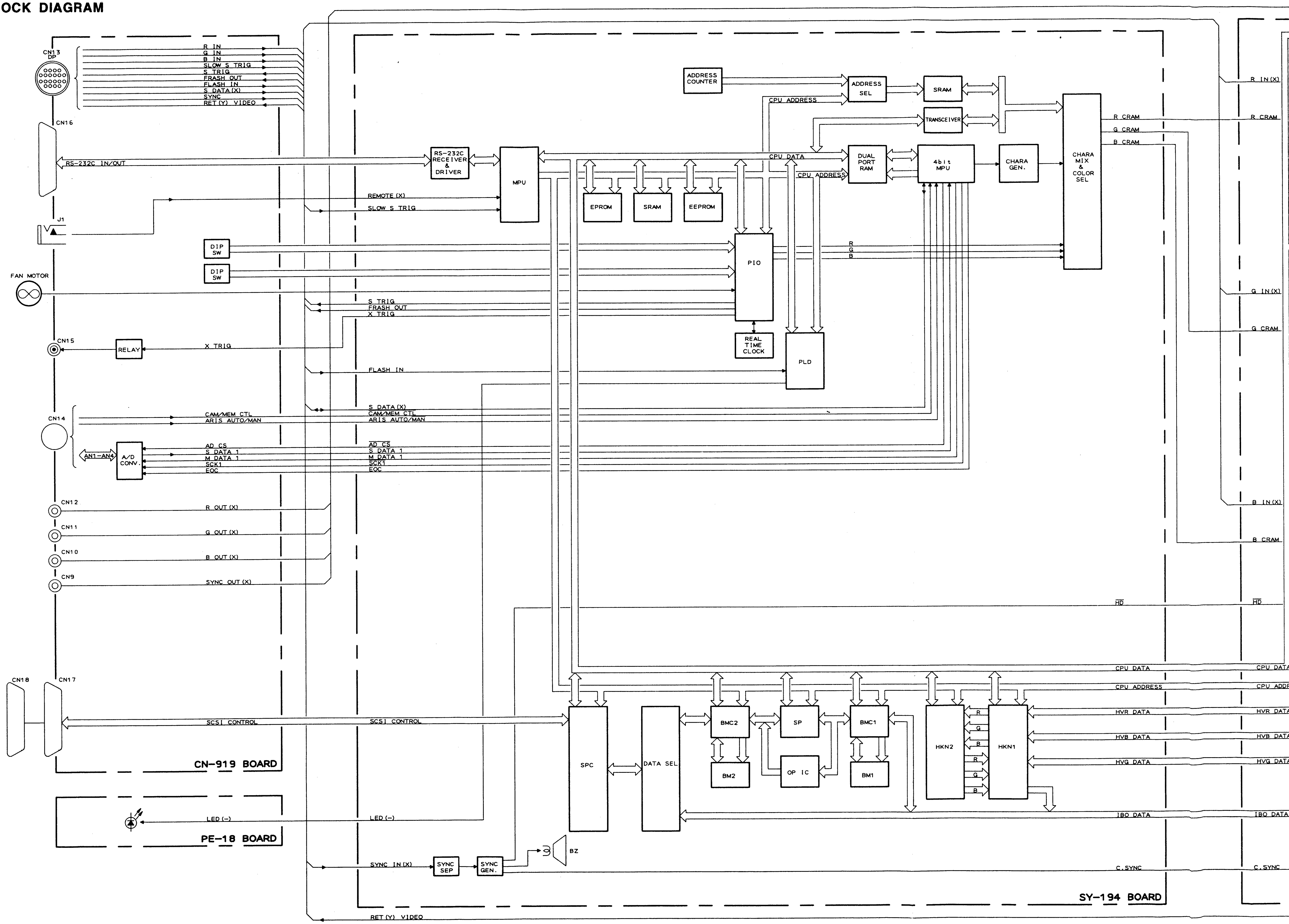

Switching Regulator
CN-919 Board
PE-18 Board
SY-194 Board
ADA-33 Board

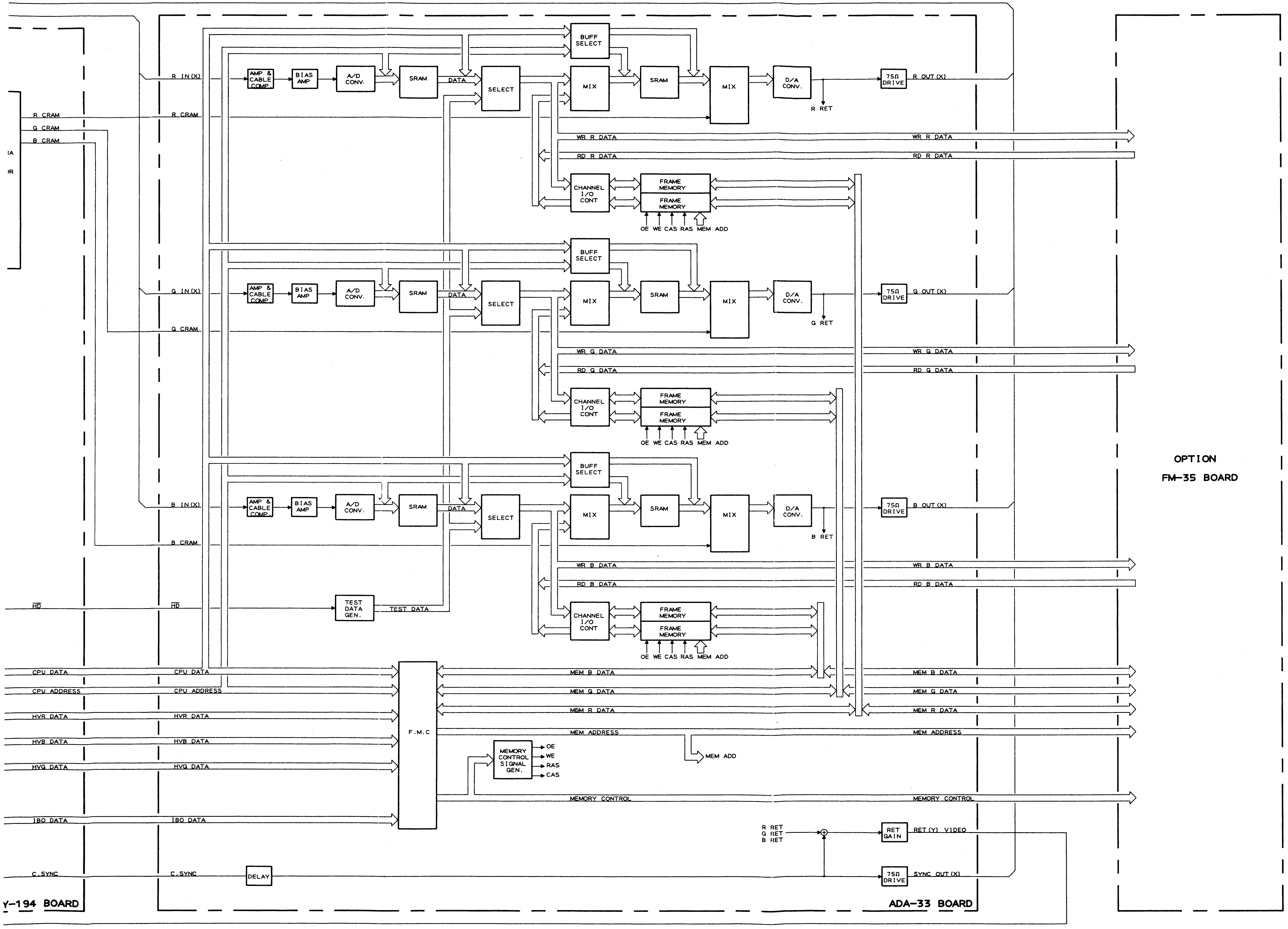
3-2. CAMERA OVERALL BLOCK DIAGRAM


PA-134 (B)
BLUE CCD IMAGER
CORRELATED DOUBLE SAMPLING
CCD DRIVE PULSE
PA-133 (G)
GREEN CCD IMAGER
CORRELATED DOUBLE SAMPLING
CCD DRIVE PULSE
RED CCD IMAGER
CORRELATED DOUBLE SAMPLING
PA-133 (R)
CCD DRIVE PULSE
PR-188
B PA
B BLK TRACKING
LPF
AMP
DRIVER
G PA
G BLK TRACKING
LPF
AMP
AGC REF PULSE
R PA
R BLACK TRACKING
LPF
AMP
C TEMP
DRIVER
CLP5
CLP3
BARS CONT
BLKG
CS2
CS3
CS4
SERIAL DATA
SYSTEM CLOCK
D/A CONV.
TG-133
XSHD, XSHP
H1, H2
LH1
RG
V1–V4
VSUB
VSUB CONT
VSUB REGULATOR
TIMING PULSE GEN.
SERIAL DATA
SYSTEM CLOCK
FRM/FLD
WEN
SHUTT STBY
CLP1
HD
VD
28MHz VCO
14MHz
SG-215
14MHz
CK
SYNC GEN.
HD
VD
SYNC
BF
BLKG

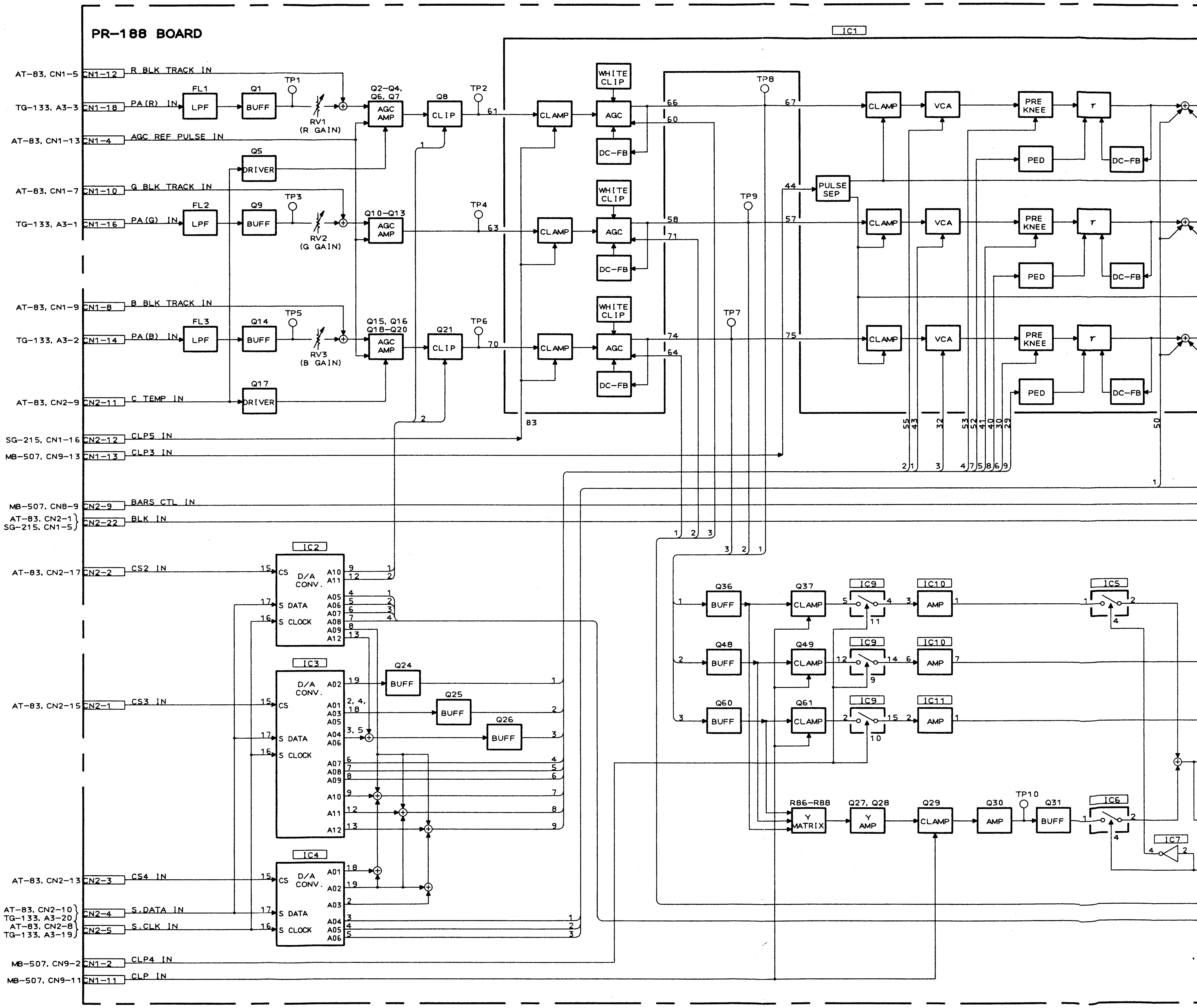

PR-188
B PA
B BLK TRACKING
G PA
G BLK TRACKING
AGC REF PULSE
R PA
R BLACK TRACKING
C TEMP
CLP5
CLP3
BARS CONT
BLKG
CS2
CS3
CS4
SERIAL DATA
SYSTEM CLOCK
LPF
AMP
CLIP
CLAMP
AGC
DRIVER
D/A CONV.
PULSE SEP
VCA
PRE KNEE
γ
PED
KNEE
WHITE CLIP
BLKG CLEAN
SW
DELAY
B PR
G PR
R PR
COLOR BAR GEN.
Y MATRIX
GAIN CONT AMP
AGC CONT
Y (IRIS)
CHRACTER
WEN
CN-909
Y
B
G
R
SYNC
WEN
SLOW SHUTTER
FLASH OUT
FLASH IN
TRIG
SERIAL DATA
VF
DP
MENU
RELEASE
UP
DOWN
FUNCTION
DATA
WHITE
BLACK
CONTROL
MODE
GRAB
SG-215
14MHz
CK
SYNC GEN.
HD
VD
SYNC
BF
BLKG
CLP-AGC GEN.
CLP-AGC
AT-83
GRAB
MODE
AGC LEVEL
G PR
B PR
R PR
Y PR
SIGNAL DETECT
G-G
R-G
B-G
Y
PEAK DETECT
CONT SELECT
BLKG
CLP1
HD
REF PULSE GEN.
C TEMP
BARS CONT
CS2
CS3
CS4
FRM/FLD
SHUTT STBY
WEN
MICRO PROCESSOR
INV
A/D CONV.
CHARACTER GEN.
EEPROM
IRIS CLOSE
IRIS CONT
R BLK TRACKING
G BLK TRACKING
B BLK TRACKING
ZOOM CONT
FOCUS CONT
+5V
REF PULSE
CHARACTER
SERIAL CLOCK
SYSTEM DATA
SERIAL DATA
FLASH
LENS
TRIG
PC IN
X
MB-507

3-3. PROCESSOR OVERALL BLOCK DIAGRAM

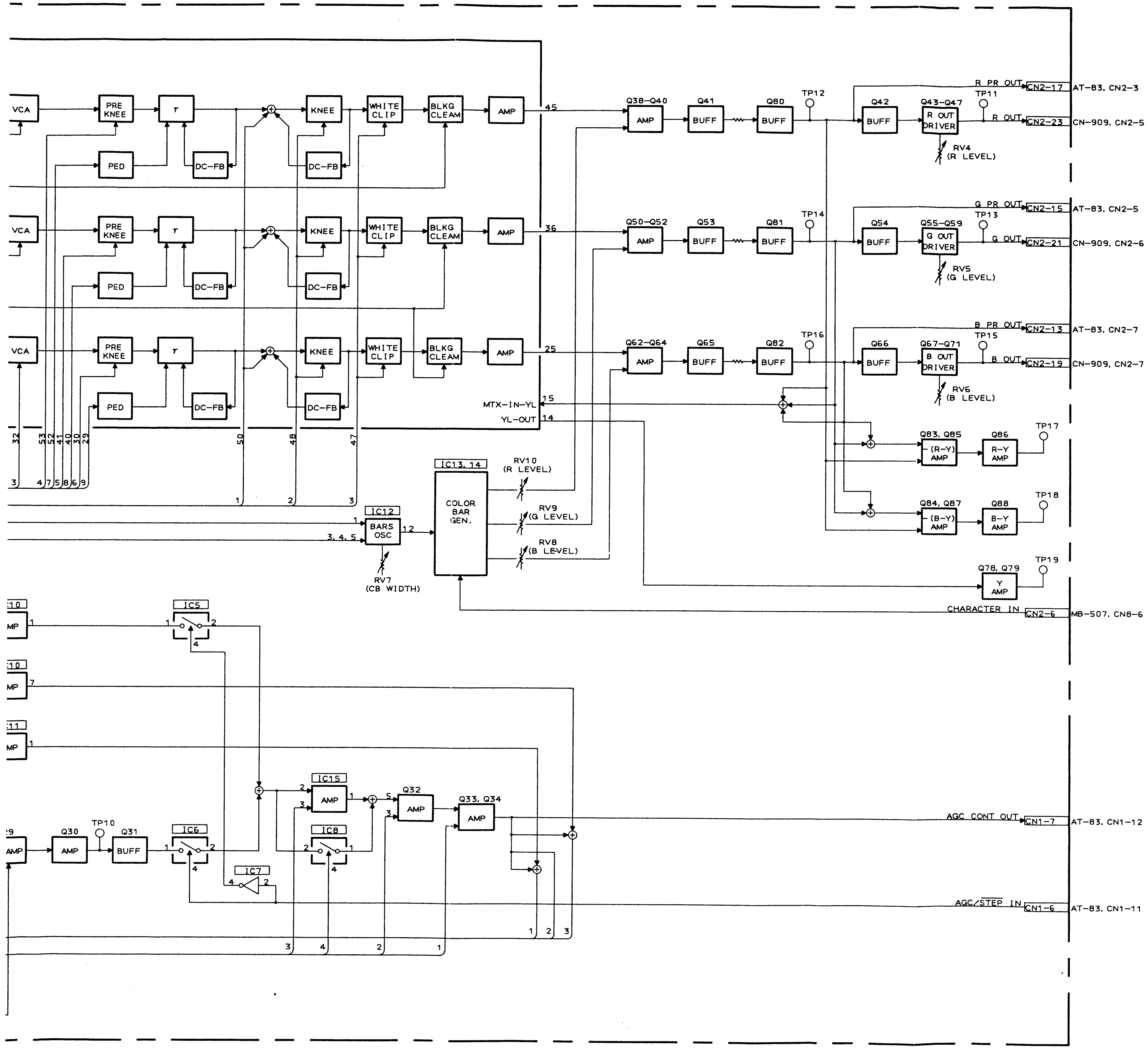

CN13 DP
R IN
G IN
B IN
SLOW S TRIG
S TRIG
FRASH OUT
FLASH IN
S DATA (X)
SYNC
RET (Y) VIDEO
CN16
RS-232C IN/OUT
RS-232C RECEIVER & DRIVER
MPU
REMOTE (X)
SLOW S TRIG
J1
DIP SW
DIP SW
FAN MOTOR
S TRIG
FRASH OUT
X TRIG
CN15
RELAY
X TRIG
FLASH IN
CN14
CAM/MEM CTL
ARIS AUTO/MAN
S DATA (X)
CAM/MEM CTL
ARIS AUTO/MAN
AN1~AN4
A/D CONV.
AD CS
S DATA 1
M DATA 1
SCK1
EOC
AD CS
S DATA 1
M DATA 1
SCK1
EOC
CN12
R OUT (X)
CN11
G OUT (X)
CN10
B OUT (X)
CN9
SYNC OUT (X)
CN18
CN17
SCSI CONTROL
SCSI CONTROL
CN-919 BOARD
LED (-)
LED (-)
PE-18 BOARD
SYNC IN (X)
SYNC SEP
SYNC GEN.
BZ
RET (Y) VIDEO
ADDRESS COUNTER
ADDRESS SEL
SRAM
TRANSCEIVER
CPU ADDRESS
CPU DATA
CPU ADDRESS
DUAL PORT RAM
4bit MPU
CHARA GEN.
CHARA MIX & COLOR SEL
R CRAM
G CRAM
B CRAM
EPROM
SRAM
EEPROM
PIO
R
G
B
REAL TIME CLOCK
PLD
HD
CPU DATA
CPU ADDRESS
HVR DATA
HVB DATA
HVG DATA
IBO DATA
C.SYNC
SPC
DATA SEL
BMC2
BM2
SP
OP IC
BMC1
BM1
HKN2
HKN1
R
G
B
R
G
B
SY-194 BOARD
R IN (X)
R CRAM
G IN (X)
G CRAM
B IN (X)
B CRAM
HD
CPU DATA
CPU ADDR
HVR DATA
HVB DATA
HVG DATA
IBO DATA
C.SYNC


R CRAM
G CRAM
B CRAM
HD
CPU DATA
CPU ADDRESS
HVR DATA
HVB DATA
HVG DATA
IBO DATA
C.SYNC
Y-194 BOARD
R IN (X)
G IN (X)
B IN (X)
AMP & CABLE COMP.
BIAS AMP
A/D CONV.
SRAM
DATA
SELECT
BUFF SELECT
MIX
D/A CONV.
R RET
G RET
B RET
75Ω DRIVE
R OUT (X)
G OUT (X)
B OUT (X)
WR R DATA
RD R DATA
WR G DATA
RD G DATA
WR B DATA
RD B DATA
CHANNEL I/O CONT
FRAME MEMORY
OE WE CAS RAS MEM ADD
TEST DATA GEN.
TEST DATA
F.M.C
MEM B DATA
MEM G DATA
MEM R DATA
MEM ADDRESS
MEM ADD
MEMORY CONTROL SIGNAL GEN.
OE
WE
RAS
CAS
MEMORY CONTROL
RET GAIN
RET (Y) VIDEO
DELAY
SYNC OUT (X)
ADA-33 BOARD
OPTION
FM-35 BOARD

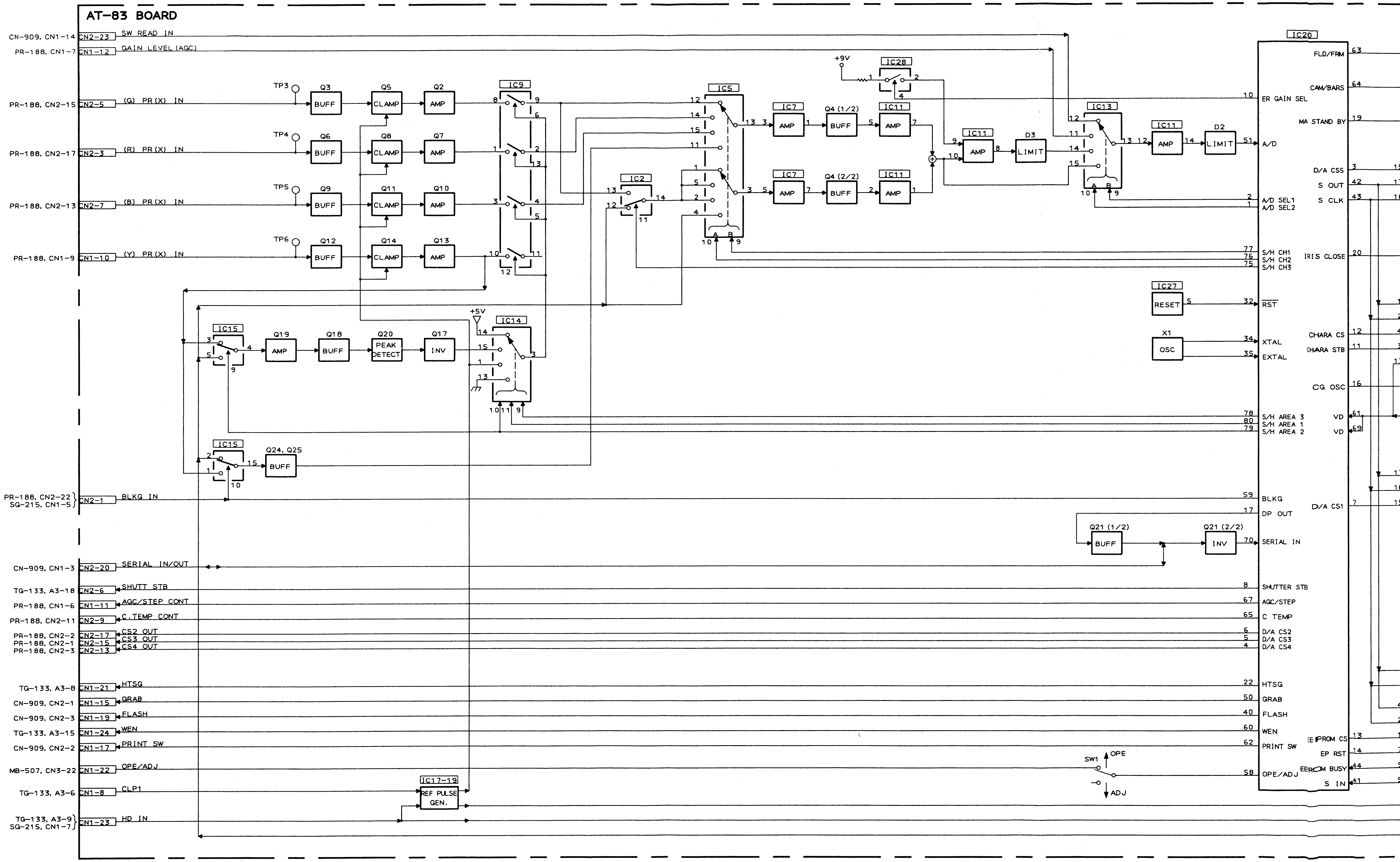
3-4. VIDEO PROCESS BLOCK DIAGRAM

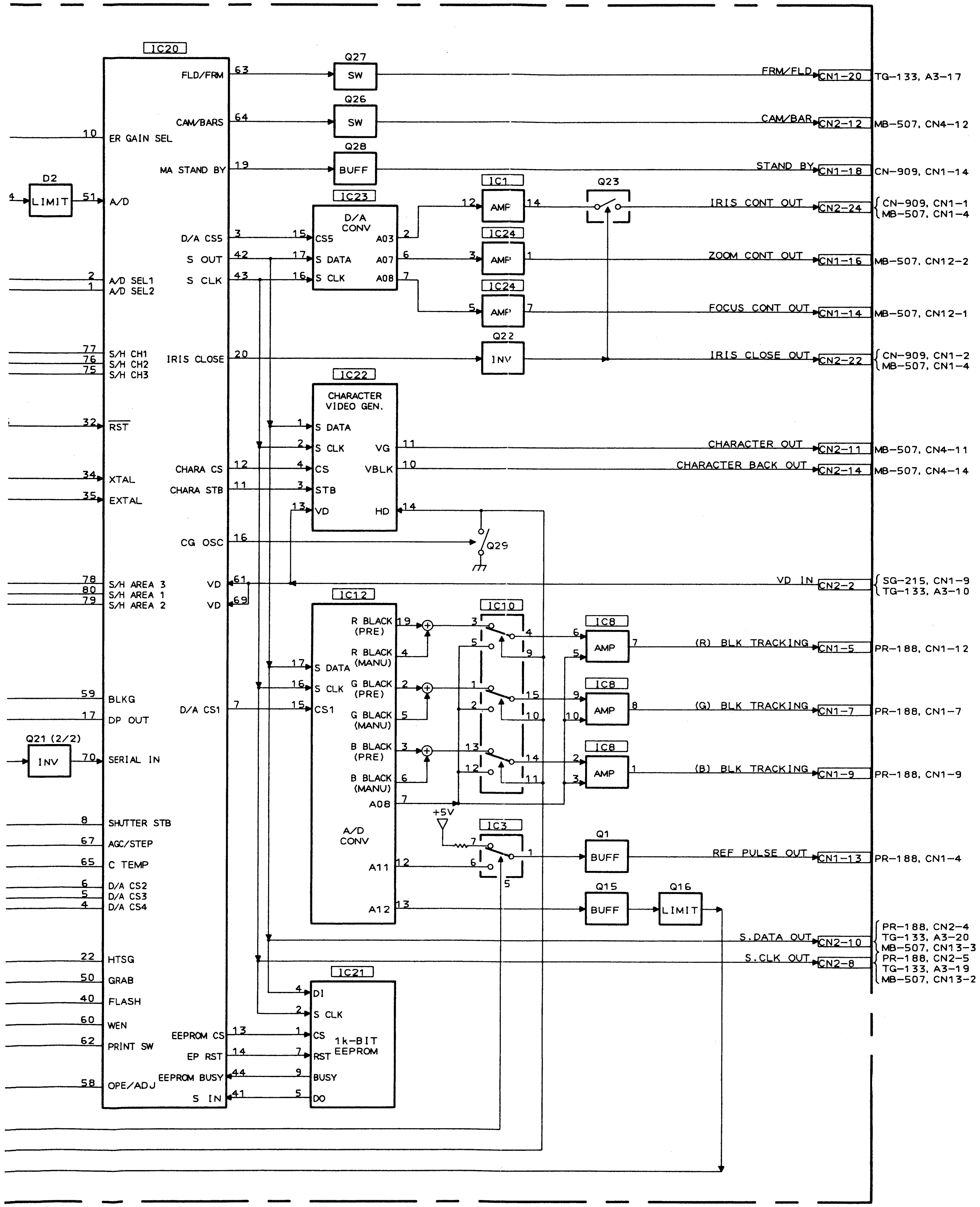


PR-188 BOARD
IC1
AT-83, CN1-5
CN1-12
R BLK TRACK IN
TG-133, A3-3
CN1-18
PA(R) IN
FL1
LPF
Q1
BUFF
TP1
RV1
(R GAIN)
Q2-Q4, Q6, Q7
AGC AMP
Q8
CLIP
TP2
61
CLAMP
WHITE CLIP
AGC
DC-FB
66
60
TP8
67
CLAMP
VCA
PRE KNEE
γ
PED
DC-FB
AT-83, CN1-13
CN1-4
AGC REF PULSE IN
Q5
DRIVER
44
PULSE SEP
AT-83, CN1-7
CN1-10
G BLK TRACK IN
TG-133, A3-1
CN1-16
PA(G) IN
FL2
Q9
TP3
RV2
(G GAIN)
Q10-Q13
TP4
63
TP9
58
71
57
AT-83, CN1-9
CN1-8
B BLK TRACK IN
TG-133, A3-2
CN1-14
PA(B) IN
FL3
Q14
TP5
RV3
(B GAIN)
Q15, Q16
Q18-Q20
Q21
TP6
70
TP7
74
64
75
AT-83, CN2-9
CN2-11
C TEMP IN
Q17
83
55 43
32
53 52 41 40 30 29
50
SG-215, CN1-16
CN2-12
CLP5 IN
MB-507, CN9-13
CN1-13
CLP3 IN
MB-507, CN8-9
CN2-9
BARS CTL IN
AT-83, CN2-1
SG-215, CN1-5
CN2-22
BLK IN
AT-83, CN2-17
CN2-2
CS2 IN
IC2
D/A CONV.
CS
S DATA
S CLOCK
A10
A11
A05
A06
A07
A08
A09
A12
Q36
BUFF
Q37
CLAMP
IC9
IC10
AMP
IC5
Q48
Q49
Q60
Q61
IC11
AT-83, CN2-15
CN2-1
CS3 IN
IC3
A02
A01
A03
A04
Q24
Q25
Q26
R86-R88
Y MATRIX
Q27, Q28
Y AMP
Q29
Q30
TP10
Q31
IC6
IC7
AT-83, CN2-13
CN2-3
CS4 IN
IC4
AT-83, CN2-10
TG-133, A3-20
CN2-4
S.DATA IN
AT-83, CN2-8
TG-133, A3-19
CN2-5
S.CLK IN
MB-507, CN9-2
CN1-2
CLP4 IN
MB-507, CN9-11
CN1-11
CLP IN

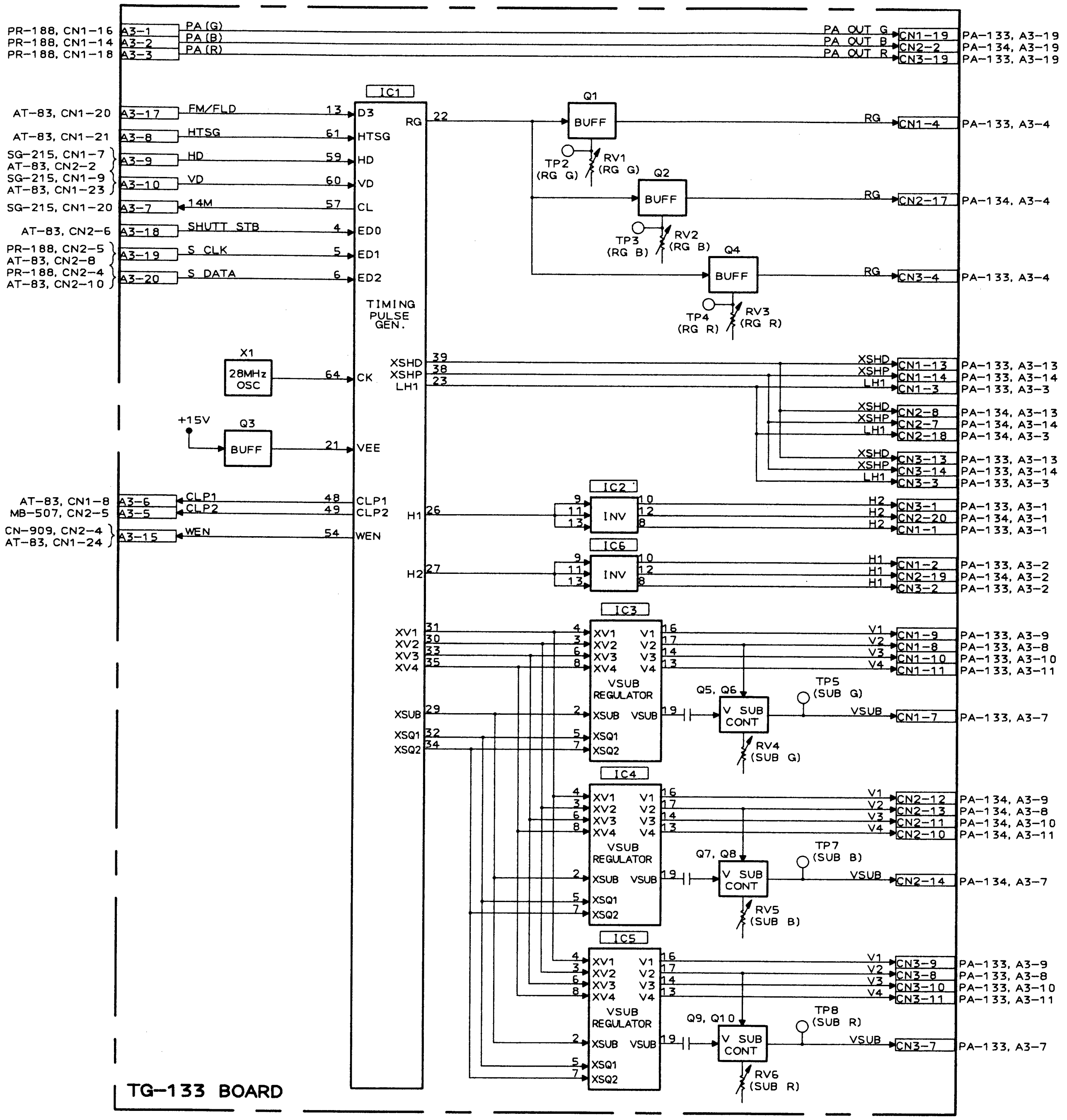

VCA
PRE KNEE
γ
PED
DC-FB
KNEE
WHITE CLIP
BLKG CLEAM
AMP
45
36
25
Q38–Q40
AMP
Q41
BUFF
Q80
BUFF
TP12
Q42
BUFF
Q43–Q47
R OUT DRIVER
TP11
R PR OUT
CN2-17
AT-83, CN2-3
R OUT
CN2-23
CN-909, CN2-5
RV4 (R LEVEL)
Q50–Q52
Q53
Q81
TP14
Q54
Q55–Q59
G OUT DRIVER
TP13
G PR OUT
CN2-15
AT-83, CN2-5
G OUT
CN2-21
CN-909, CN2-6
RV5 (G LEVEL)
Q62–Q64
Q65
Q82
TP16
Q66
Q67–Q71
B OUT DRIVER
TP15
B PR OUT
CN2-13
AT-83, CN2-7
B OUT
CN2-19
CN-909, CN2-7
RV6 (B LEVEL)
MTX-IN-YL 15
YL-OUT 14
Q83, Q85
(R-Y) AMP
Q86
R-Y AMP
TP17
Q84, Q87
(B-Y) AMP
Q88
B-Y AMP
TP18
Q78, Q79
Y AMP
TP19
CHARACTER IN
CN2-6
MB-507, CN8-6
32 53 52 41 40 30 29
50 48 47
3 4 7 5 8 6 9
1 2 3
IC13, 14
COLOR BAR GEN.
RV10 (R LEVEL)
RV9 (G LEVEL)
RV8 (B LEVEL)
IC12
BARS OSC
3, 4, 5
12
RV7 (CB WIDTH)
IC10
IC11
AMP
IC5
IC6
IC7
IC15
IC8
Q30
AMP
TP10
Q31
BUFF
Q32
AMP
Q33, Q34
AMP
AGC CONT OUT
CN1-7
AT-83, CN1-12
AGC/STEP IN
CN1-6
AT-83, CN1-11

-5. TIMING CONTROL BLOCK DIAGRAM

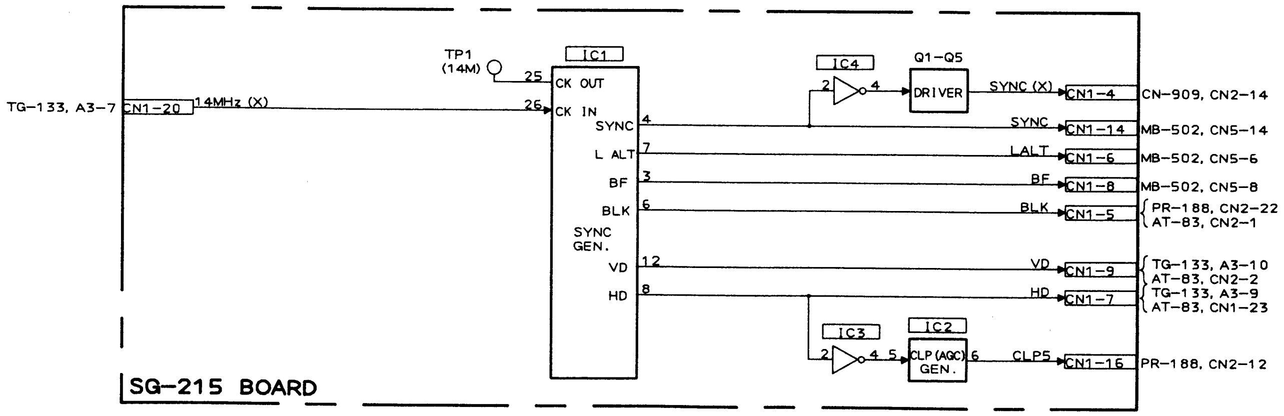

AT-83 BOARD
CN-909, CN1-14
CN2-23
SW READ IN
PR-188, CN1-7
CN1-12
GAIN LEVEL (AGC)
PR-188, CN2-15
CN2-5
(G) PR(X) IN
PR-188, CN2-17
CN2-3
(R) PR(X) IN
PR-188, CN2-13
CN2-7
(B) PR(X) IN
PR-188, CN1-9
CN1-10
(Y) PR(X) IN
TP3
TP4
TP5
TP6
Q3
Q6
Q9
Q12
BUFF
Q5
Q8
Q11
Q14
CLAMP
Q2
Q7
Q10
Q13
AMP
IC9
IC2
IC5
IC7
Q4 (1/2)
Q4 (2/2)
IC11
IC28
+9V
D3
LIMIT
IC13
D2
IC20
IC15
Q19
Q18
Q20
PEAK DETECT
Q17
INV
IC14
+5V
Q24, Q25
PR-188, CN2-22
SG-215, CN1-5
CN2-1
BLKG IN
CN-909, CN1-3
CN2-20
SERIAL IN/OUT
TG-133, A3-18
CN2-6
SHUTT STB
PR-188, CN1-6
CN1-11
AGC/STEP CONT
PR-188, CN2-11
CN2-9
C.TEMP CONT
PR-188, CN2-2
PR-188, CN2-1
PR-188, CN2-3
CN2-17
CN2-15
CN2-13
CS2 OUT
CS3 OUT
CS4 OUT
TG-133, A3-8
CN1-21
HTSG
CN-909, CN2-1
CN1-15
GRAB
CN-909, CN2-3
CN1-19
FLASH
TG-133, A3-15
CN1-24
WEN
CN-909, CN2-2
CN1-17
PRINT SW
MB-507, CN3-22
CN1-22
OPE/ADJ
TG-133, A3-6
CN1-8
CLP1
IC17-19
REF PULSE GEN.
TG-133, A3-9
SG-215, CN1-7
CN1-23
HD IN
IC27
RESET
X1
OSC
Q21 (1/2)
Q21 (2/2)
SW1
OPE
ADJ
FLD/FRM
CAM/BARS
MA STAND BY
ER GAIN SEL
A/D
D/A CS5
S OUT
S CLK
A/D SEL1
A/D SEL2
S/H CH1
S/H CH2
S/H CH3
IRIS CLOSE
RST
XTAL
EXTAL
CHARA CS
CHARA STB
CG OSC
S/H AREA 3
S/H AREA 1
S/H AREA 2
VD
VD
BLKG
DP OUT
D/A CS1
SERIAL IN
SHUTTER STB
AGC/STEP
C TEMP
D/A CS2
D/A CS3
D/A CS4
HTSG
GRAB
FLASH
WEN
PRINT SW
OPE/ADJ
EEPROM CS
EP RST
EEROM BUSY
S IN



IC20
FLD/FRM
CAM/BARS
ER GAIN SEL
MA STAND BY
D2
LIMIT
A/D
D/A CS5
S OUT
S CLK
A/D SEL1
A/D SEL2
S/H CH1
S/H CH2
S/H CH3
IRIS CLOSE
RST
CHARA CS
CHARA STB
XTAL
EXTAL
CG OSC
S/H AREA 3
S/H AREA 1
S/H AREA 2
VD
VD
BLKG
DP OUT
D/A CS1
Q21 (2/2)
INV
SERIAL IN
SHUTTER STB
AGC/STEP
C TEMP
D/A CS2
D/A CS3
D/A CS4
HTSG
GRAB
FLASH
WEN
PRINT SW
OPE/ADJ
EEPROM CS
EP RST
EEPROM BUSY
S IN
Q27
SW
Q26
SW
Q28
BUFF
IC23
D/A CONV
CS5
S DATA
S CLK
A03
A07
A08
IC1
AMP
IC24
AMP
IC24
AMP
Q23
Q22
INV
IC22
CHARACTER VIDEO GEN.
S DATA
S CLK
CS
STB
VD
VG
VBLK
HD
Q29
IC12
R BLACK (PRE)
R BLACK (MANU)
G BLACK (PRE)
G BLACK (MANU)
B BLACK (PRE)
B BLACK (MANU)
A08
A/D CONV
A11
A12
S DATA
S CLK
CS1
IC10
IC8
AMP
IC8
AMP
IC8
AMP
+5V
IC3
Q1
BUFF
Q15
BUFF
Q16
LIMIT
IC21
DI
S CLK
CS
RST
BUSY
DO
1k-BIT EEPROM
FRM/FLD
CN1-20
TG-133, A3-17
CAM/BAR
CN2-12
MB-507, CN4-12
STAND BY
CN1-18
CN-909, CN1-14
IRIS CONT OUT
CN2-24
CN-909, CN1-1
MB-507, CN1-4
ZOOM CONT OUT
CN1-16
MB-507, CN12-2
FOCUS CONT OUT
CN1-14
MB-507, CN12-1
IRIS CLOSE OUT
CN2-22
CN-909, CN1-2
MB-507, CN1-4
CHARACTER OUT
CN2-11
MB-507, CN4-11
CHARACTER BACK OUT
CN2-14
MB-507, CN4-14
VD IN
CN2-2
SG-215, CN1-9
TG-133, A3-10
(R) BLK TRACKING
CN1-5
PR-188, CN1-12
(G) BLK TRACKING
CN1-7
PR-188, CN1-7
(B) BLK TRACKING
CN1-9
PR-188, CN1-9
REF PULSE OUT
CN1-13
PR-188, CN1-4
S.DATA OUT
CN2-10
S.CLK OUT
CN2-8
PR-188, CN2-4
TG-133, A3-20
MB-507, CN13-3
PR-188, CN2-5
TG-133, A3-19
MB-507, CN13-2

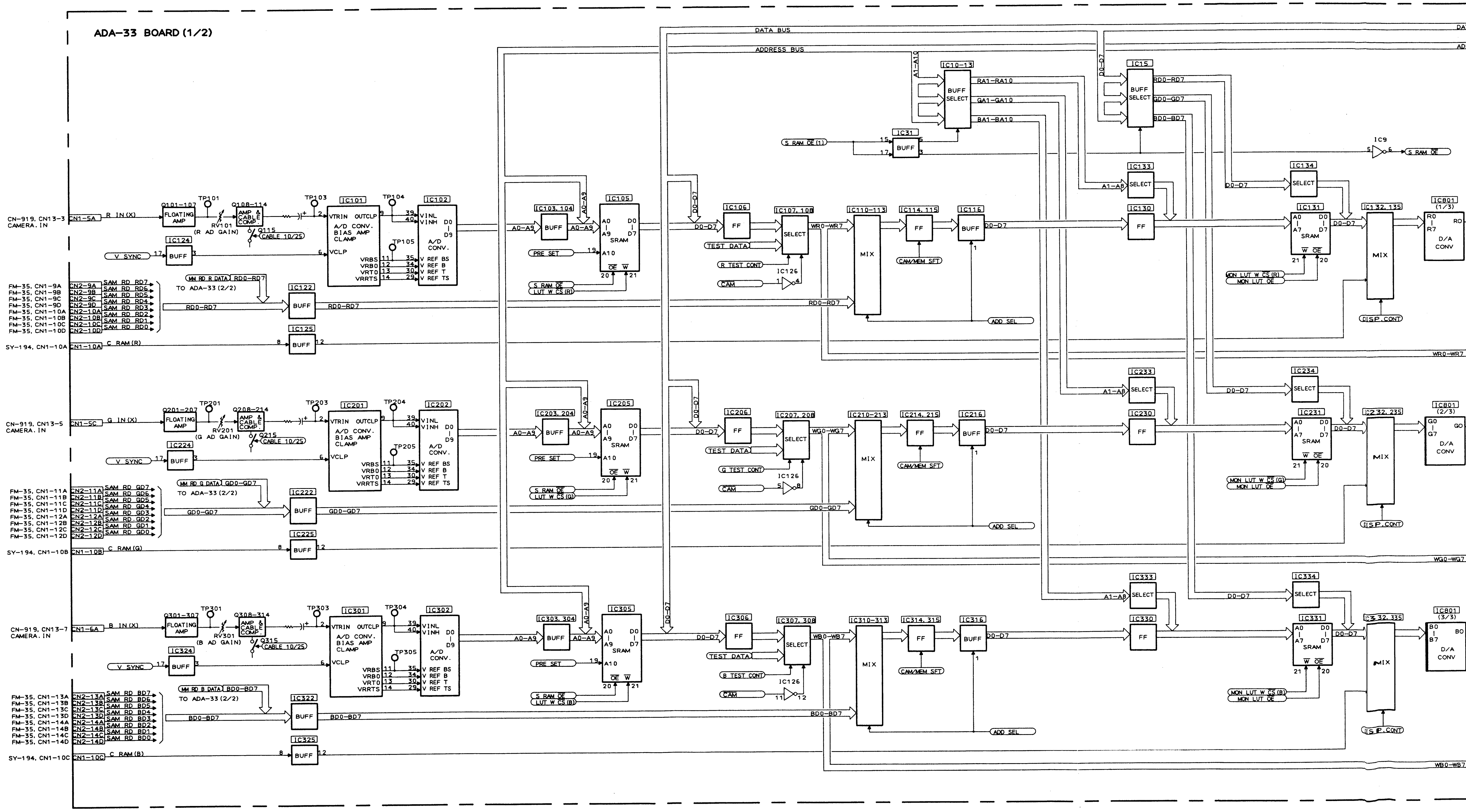


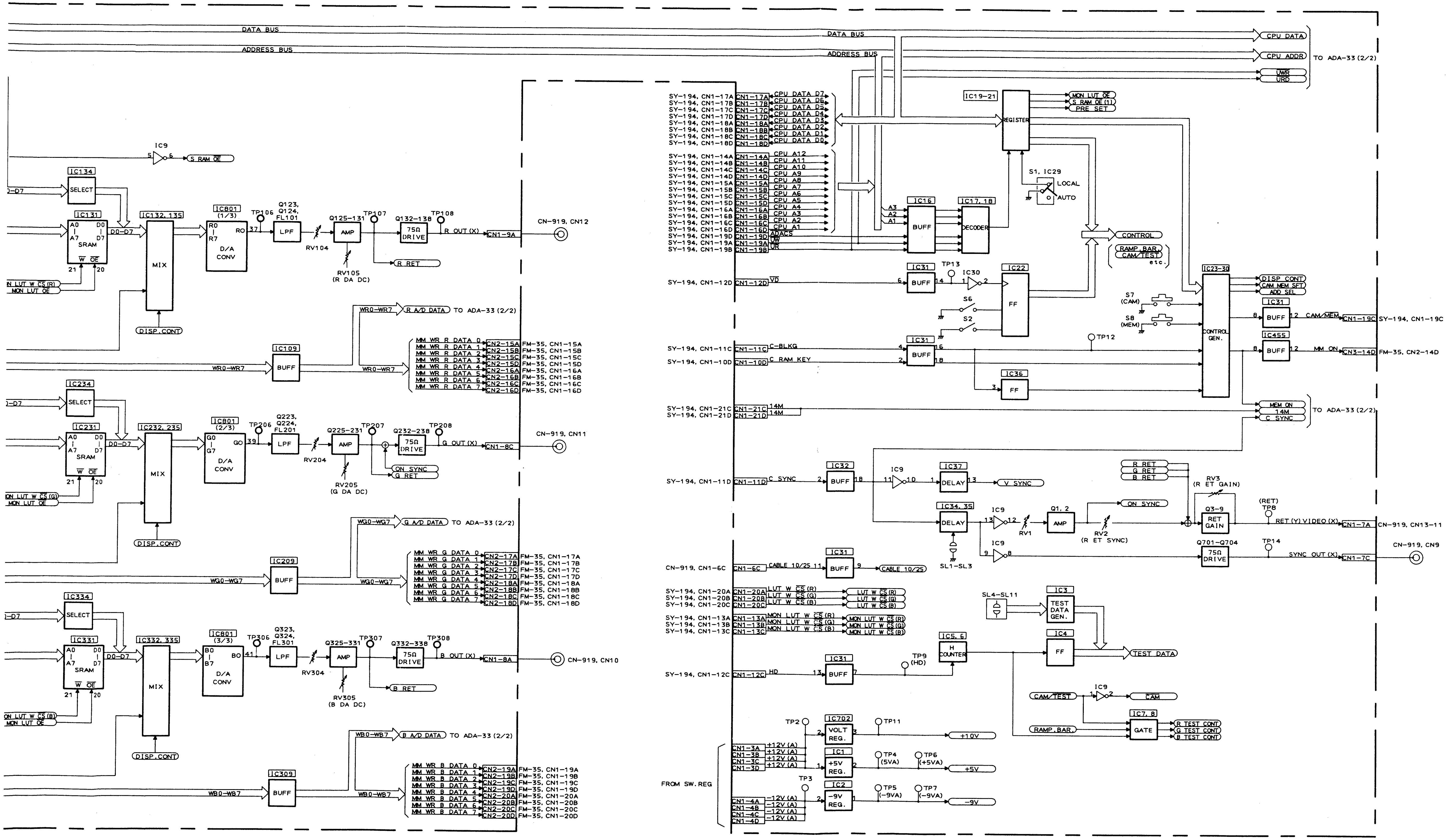
PR-188, CN1-16
PR-188, CN1-14
PR-188, CN1-18
A3-1
A3-2
A3-3
PA (G)
PA (B)
PA (R)
PA OUT G
PA OUT B
PA OUT R
CN1-19
CN2-2
CN3-19
PA-133, A3-19
PA-134, A3-19
PA-133, A3-19
AT-83, CN1-20
AT-83, CN1-21
SG-215, CN1-7
AT-83, CN2-2
SG-215, CN1-9
AT-83, CN1-23
SG-215, CN1-20
AT-83, CN2-6
PR-188, CN2-5
AT-83, CN2-8
PR-188, CN2-4
AT-83, CN2-10
A3-17
A3-8
A3-9
A3-10
A3-7
A3-18
A3-19
A3-20
FM/FLD
HTSG
HD
VD
14M
SHUTT STB
S CLK
S DATA
IC1
D3
HTSG
HD
VD
CL
ED0
ED1
ED2
TIMING PULSE GEN.
RG
Q1
BUFF
TP2 (RG G)
RV1 (RG G)
Q2
BUFF
TP3 (RG B)
RV2 (RG B)
Q4
BUFF
TP4 (RG R)
RV3 (RG R)
RG
CN1-4
PA-133, A3-4
RG
CN2-17
PA-134, A3-4
RG
CN3-4
PA-133, A3-4
X1
28MHz OSC
CK
XSHD
XSHP
LH1
+15V
Q3
BUFF
VEE
AT-83, CN1-8
MB-507, CN2-5
CN-909, CN2-4
AT-83, CN1-24
A3-6
A3-5
A3-15
CLP1
CLP2
WEN
CLP1
CLP2
WEN
H1
H2
IC2
INV
IC6
INV
XSHD
XSHP
LH1
CN1-13
CN1-14
CN1-3
PA-133, A3-13
PA-133, A3-14
PA-133, A3-3
CN2-8
CN2-7
CN2-18
PA-134, A3-13
PA-134, A3-14
PA-134, A3-3
CN3-13
CN3-14
CN3-3
PA-133, A3-13
PA-133, A3-14
PA-133, A3-3
H2
CN3-1
CN2-20
CN1-1
PA-133, A3-1
PA-134, A3-1
PA-133, A3-1
H1
CN1-2
CN2-19
CN3-2
PA-133, A3-2
PA-134, A3-2
PA-133, A3-2
XV1
XV2
XV3
XV4
XSUB
XSQ1
XSQ2
IC3
IC4
IC5
VSUB REGULATOR
V1
V2
V3
V4
VSUB
Q5, Q6
Q7, Q8
Q9, Q10
V SUB CONT
TP5 (SUB G)
RV4 (SUB G)
TP7 (SUB B)
RV5 (SUB B)
TP8 (SUB R)
RV6 (SUB R)
CN1-9
CN1-8
CN1-10
CN1-11
PA-133, A3-9
PA-133, A3-8
PA-133, A3-10
PA-133, A3-11
CN1-7
PA-133, A3-7
CN2-12
CN2-13
CN2-11
CN2-10
PA-134, A3-9
PA-134, A3-8
PA-134, A3-10
PA-134, A3-11
CN2-14
PA-134, A3-7
CN3-9
CN3-8
CN3-10
CN3-11
PA-133, A3-9
PA-133, A3-8
PA-133, A3-10
PA-133, A3-11
CN3-7
PA-133, A3-7
TG-133 BOARD



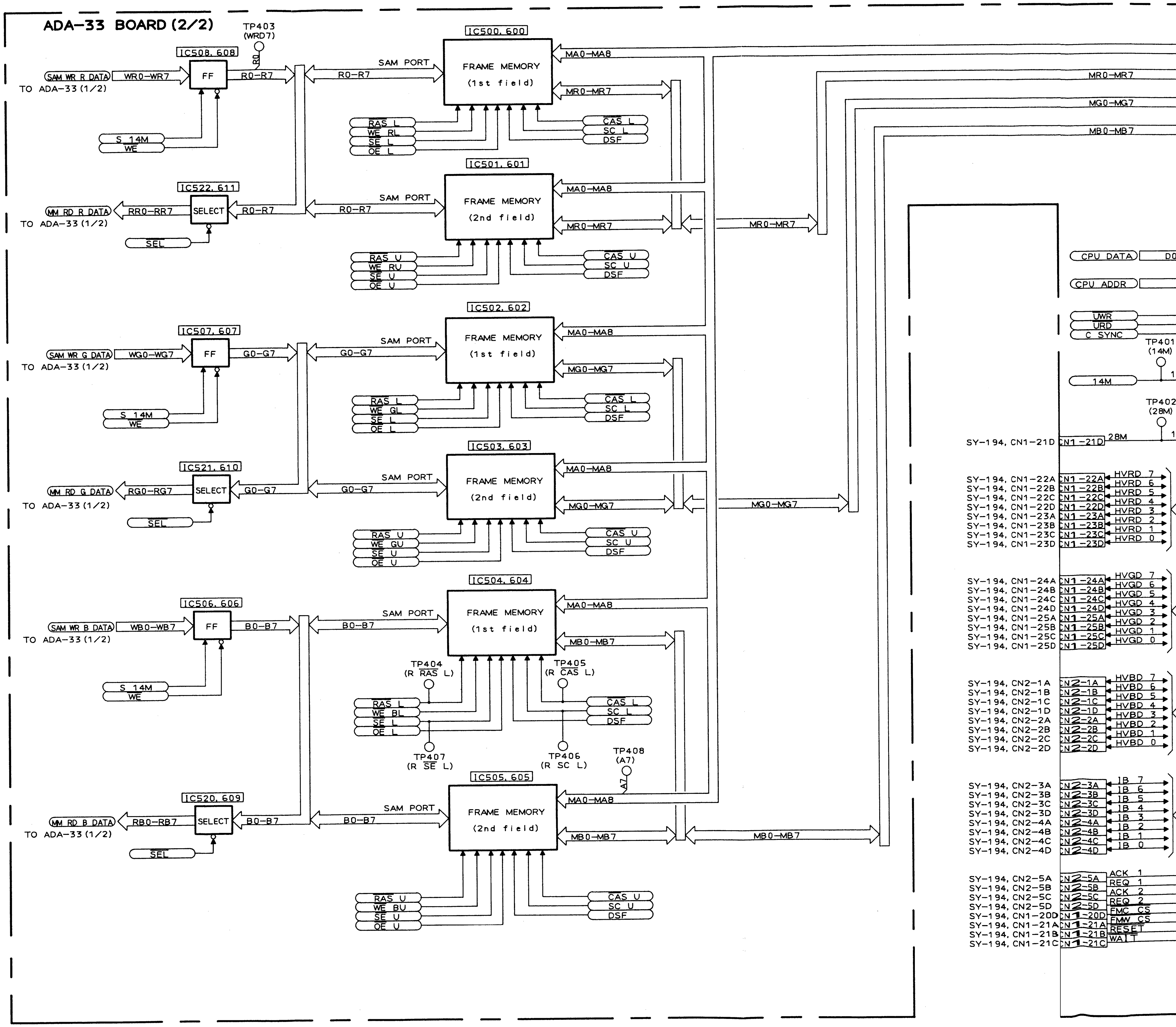
TP1 (14M)
IC1
CK OUT
CK IN
SYNC
L ALT
BF
BLK
SYNC GEN.
VD
HD
TG-133, A3-7
CN1-20
14MHz (X)
IC4
Q1-Q5
DRIVER
SYNC (X)
CN1-4
CN-909, CN2-14
SYNC
CN1-14
MB-502, CN5-14
LALT
CN1-6
MB-502, CN5-6
BF
CN1-8
MB-502, CN5-8
BLK
CN1-5
PR-188, CN2-22
AT-83, CN2-1
VD
CN1-9
TG-133, A3-10
AT-83, CN2-2
HD
CN1-7
TG-133, A3-9
AT-83, CN1-23
IC3
IC2
CLP (AGC) GEN.
CLP5
CN1-16
PR-188, CN2-12
SG-215 BOARD

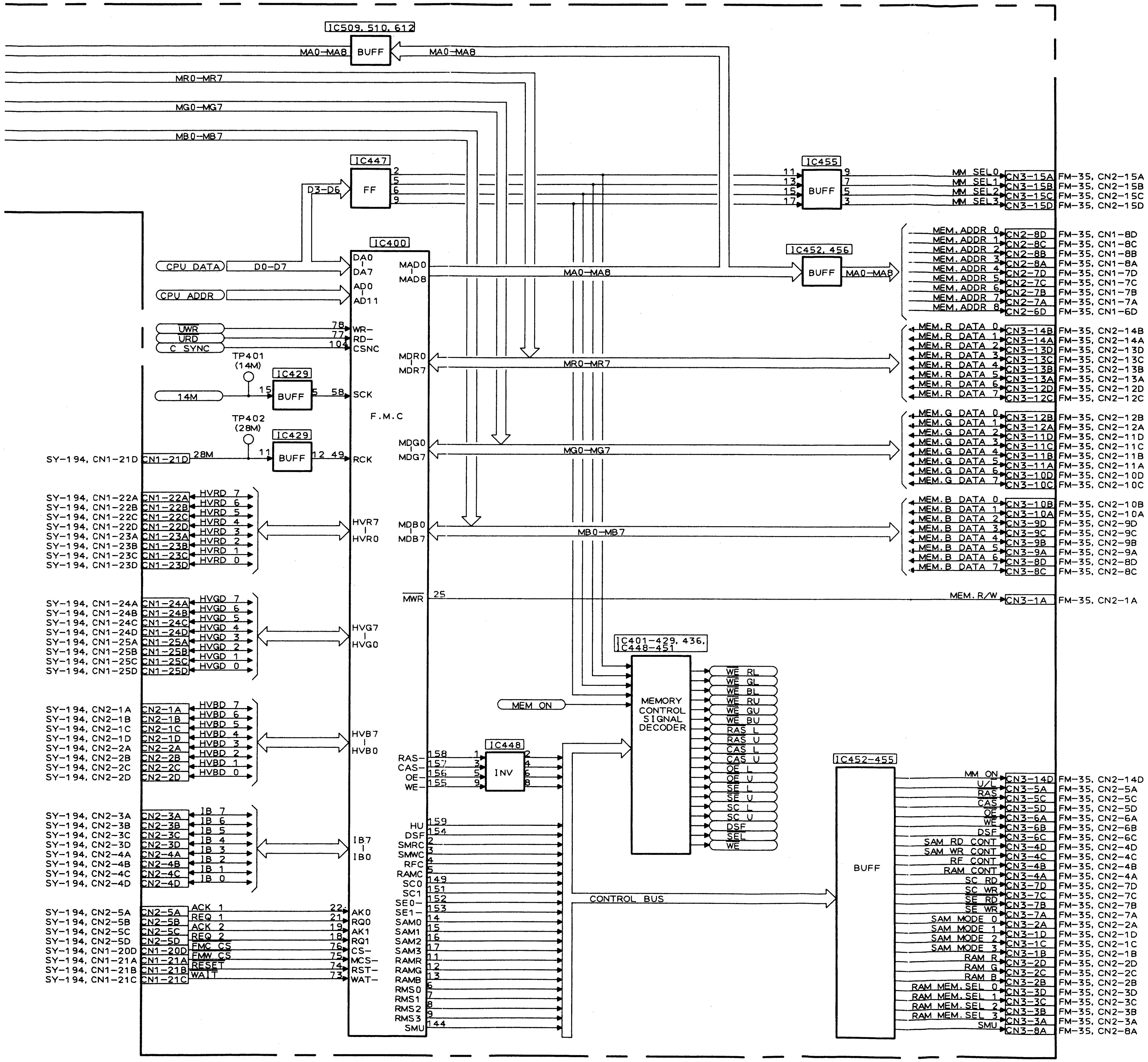
3-6. A/D, D/A CONVERTOR BLOCK DIAGRAM


ADA-33 BOARD (1/2)
DATA BUS
ADDRESS BUS
CN-919, CN13-3 CAMERA. IN
CN-919, CN13-5 CAMERA. IN
CN-919, CN13-7 CAMERA. IN
SY-194, CN1-10A
SY-194, CN1-10B
SY-194, CN1-10C
R IN (X)
G IN (X)
B IN (X)
V SYNC
C RAM (R)
C RAM (G)
C RAM (B)
FLOATING AMP
AMP & CABLE COMP.
RV101 (R AD GAIN)
RV201 (G AD GAIN)
RV301 (B AD GAIN)
CABLE 10/25
TP101
TP103
TP104
TP105
IC101
A/D CONV. BIAS AMP CLAMP
IC102
A/D CONV.
IC103, 104
IC105
SRAM
IC106
IC107, 108
IC110–113
IC114, 115
IC116
IC10–13
IC15
IC31
IC9
IC130
IC131
IC132, 135
IC133
IC134
IC801 (1/3)
IC801 (2/3)
IC801 (3/3)
D/A CONV
MIX
SELECT
BUFF
FF
PRE SET
S RAM OE
LUT W CS (R)
LUT W CS (G)
LUT W CS (B)
TEST DATA
R TEST CONT
G TEST CONT
B TEST CONT
CAM
IC126
CAM/MEM SFT
ADD SEL
DISP. CONT
MON LUT W CS (R)
MON LUT OE
TO ADA-33 (2/2)
RD0–RD7
GD0–GD7
BD0–BD7
WR0–WR7
WG0–WG7
WB0–WB7
RA1–RA10
GA1–GA10
BA1–BA10
A0–A9
D0–D7
A1–A8

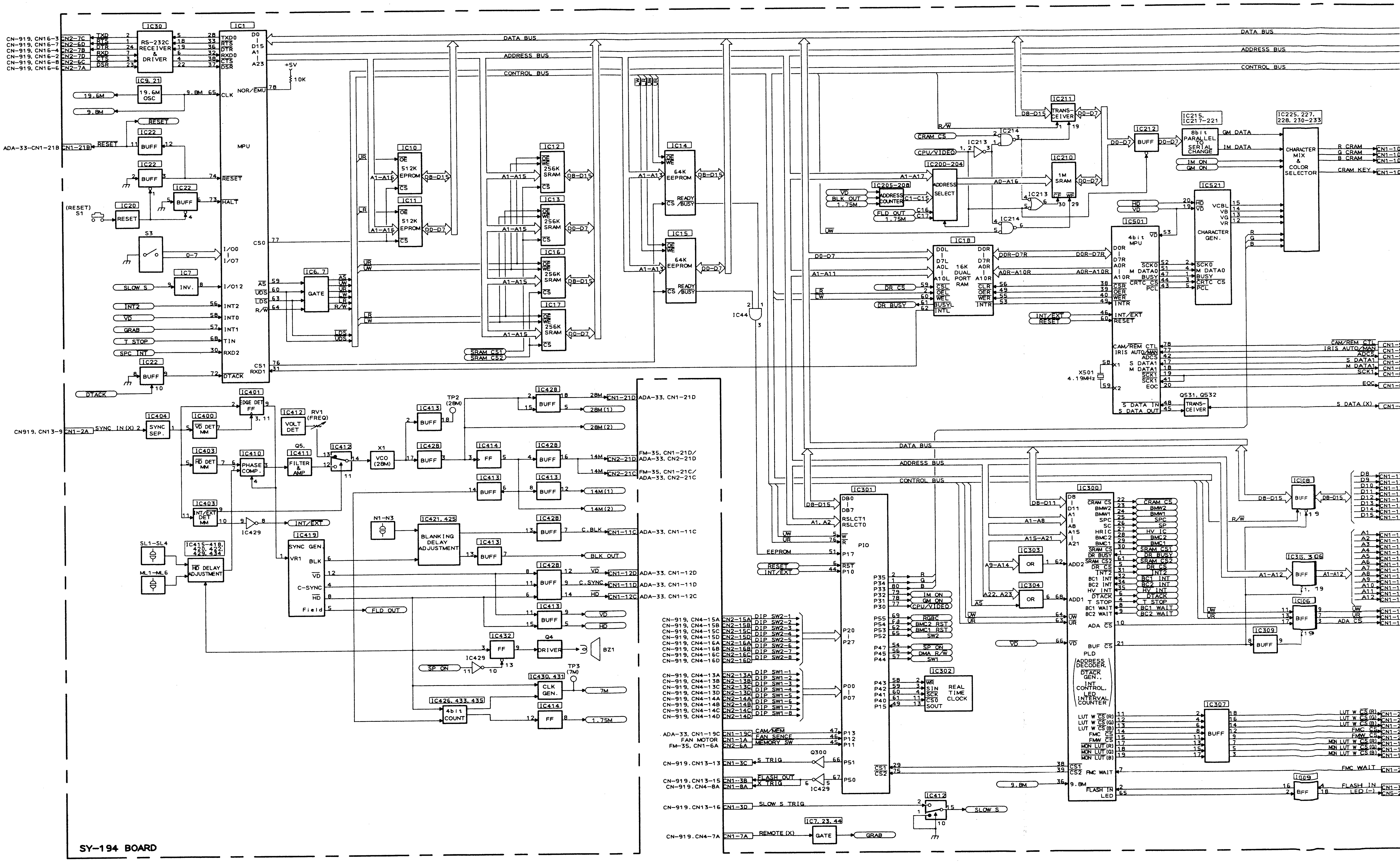

DATA BUS
ADDRESS BUS
IC9
S RAM OE
IC134 SELECT
IC131 SRAM
IC132, 135 MIX
IC801 (1/3) D/A CONV
TP106
Q123, Q124, FL101
LPF
RV104
Q125–131 AMP
RV105 (R DA DC)
TP107
Q132–138 75Ω DRIVE
TP108
R OUT (X)
CN1–9A
CN–919, CN12
R RET
DISP. CONT
WR0–WR7
R A/D DATA TO ADA–33 (2/2)
IC109 BUFF
MM WR R DATA 0–7
CN2–15A … CN2–16D
FM–35, CN1–15A … FM–35, CN1–16D
IC234 SELECT
IC231 SRAM
IC232, 235 MIX
IC801 (2/3) D/A CONV
TP206
Q223, Q224, FL201
RV204
Q225–231 AMP
RV205 (G DA DC)
TP207
Q232–238 75Ω DRIVE
TP208
G OUT (X)
CN1–8C
CN–919, CN11
ON SYNC
G RET
WG0–WG7
G A/D DATA TO ADA–33 (2/2)
IC209 BUFF
MM WR G DATA 0–7
CN2–17A … CN2–18D
FM–35, CN1–17A … FM–35, CN1–18D
IC334 SELECT
IC331 SRAM
IC332, 335 MIX
IC801 (3/3) D/A CONV
TP306
Q323, Q324, FL301
RV304
Q325–331 AMP
RV305 (B DA DC)
TP307
Q332–338 75Ω DRIVE
TP308
B OUT (X)
CN1–8A
CN–919, CN10
B RET
WB0–WB7
B A/D DATA TO ADA–33 (2/2)
IC309 BUFF
MM WR B DATA 0–7
CN2–19A … CN2–20D
FM–35, CN1–19A … FM–35, CN1–20D
LUT W CS (R)(G)(B)
MON LUT OE
SY–194, CN1–17A … CN1–18D
CPU DATA D7 … D0
SY–194, CN1–14A … CN1–19B
CPU A12 … A1
ADRCS
UW
UR
CPU DATA
CPU ADDR
UWR
URD
TO ADA–33 (2/2)
IC19–21 REGISTER
MON LUT OE
S RAM OE (1)
PRE SET
S1, IC29 LOCAL AUTO
IC16 BUFF
IC17, 18 DECODER
A3 A2 A1
CONTROL
RAMP. BAR, CAM/TEST etc.
SY–194, CN1–12D VD
IC31 BUFF
TP13
IC30
IC22 FF
S6
S2
IC23–30 CONTROL GEN.
DISP CONT
CAM MEM SFT
ADD SEL
S7 (CAM)
S8 (MEM)
IC31 BUFF
CAM/MEM
CN1–19C SY–194, CN1–19C
TP12
IC455 BUFF
MM ON
CN3–14D FM–35, CN2–14D
SY–194, CN1–11C C–BLKG
SY–194, CN1–10D C RAM KEY
IC36 FF
SY–194, CN1–21C 14M
SY–194, CN1–21D 14M
MEM ON
14M
C SYNC
TO ADA–33 (2/2)
SY–194, CN1–11D C SYNC
IC32 BUFF
IC9
IC37 DELAY
V SYNC
IC34, 35 DELAY
SL1–SL3
R RET
G RET
B RET
RV3 (R ET GAIN)
ON SYNC
Q1, 2 AMP
RV1
RV2 (R ET SYNC)
Q3–9 RET GAIN
(RET) TP8
RET (Y) VIDEO (X)
CN1–7A CN–919, CN13–11
Q701–Q704 75Ω DRIVE
TP14
SYNC OUT (X)
CN1–7C
CN–919, CN9
CN–919, CN1–6C CABLE 10/25
IC31 BUFF
CABLE 10/25
SY–194, CN1–20A LUT W CS (R)
SY–194, CN1–20B LUT W CS (G)
SY–194, CN1–20C LUT W CS (B)
SY–194, CN1–13A MON LUT W CS (R)
SY–194, CN1–13B MON LUT W CS (G)
SY–194, CN1–13C MON LUT W CS (B)
SL4–SL11
IC3 TEST DATA GEN.
IC5, 6 H COUNTER
IC4 FF
TEST DATA
TP9 (HD)
SY–194, CN1–12C HD
IC31 BUFF
CAM/TEST
IC9
CAM
IC7, 8 GATE
RAMP. BAR.
R TEST CONT
G TEST CONT
B TEST CONT
TP2
IC702 VOLT REG.
TP11
+10V
FROM SW. REG
CN1–3A … CN1–3D +12V (A)
IC1 +5V REG.
TP4 (5VA)
TP6 (+5VA)
+5V
TP3
IC2 –9V REG.
TP5 (–9VA)
TP7 (–9VA)
–9V
CN1–4A … CN1–4D –12V (A)

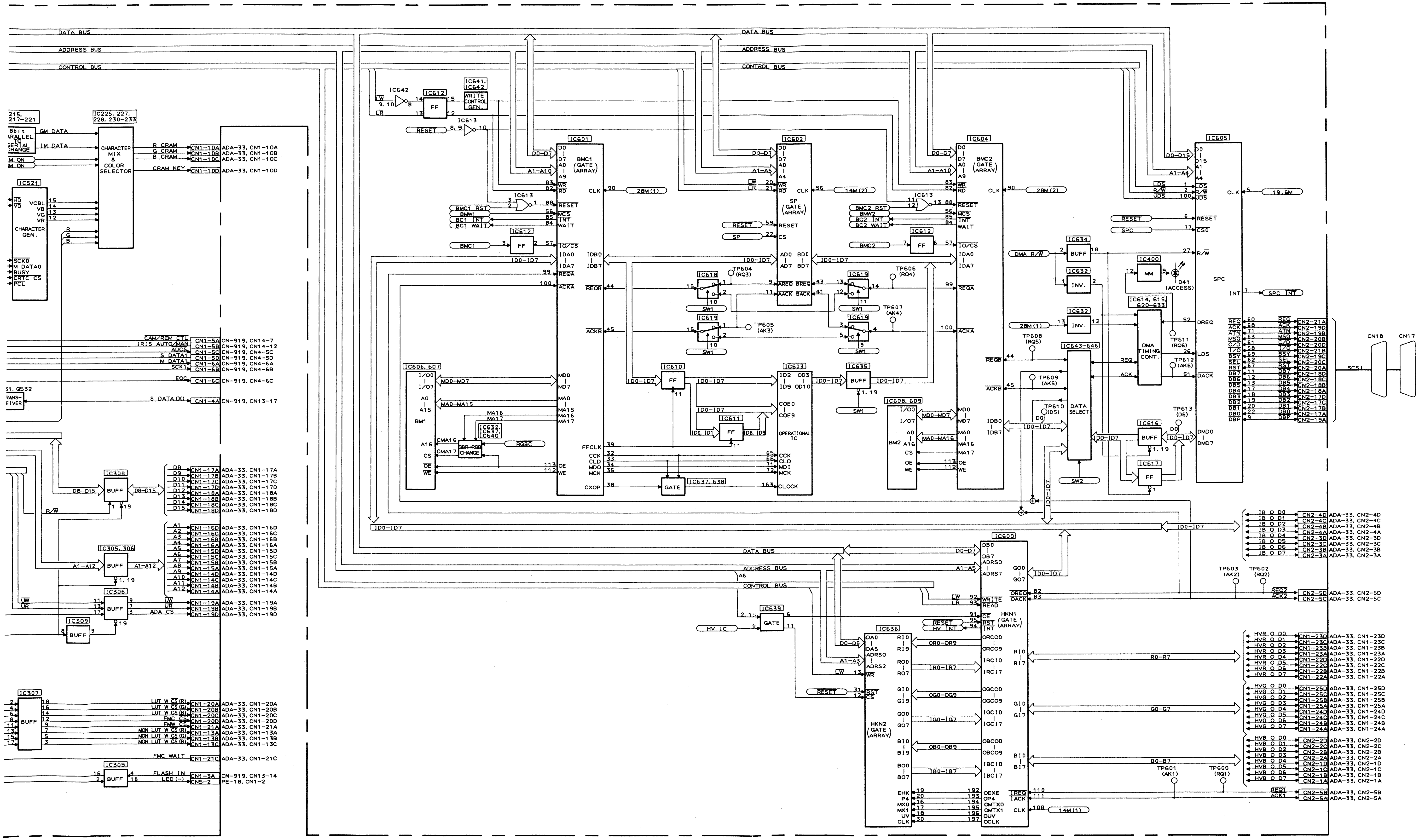
3-7. FRAME MEMORY BLOCK DIAGRAM


ADA-33 BOARD (2/2)
TP403 (WRD7)
R0
IC508, 608
FF
SAM WR R DATA
WR0-WR7
R0-R7
TO ADA-33 (1/2)
S 14M
WE
IC522, 611
SELECT
MM RD R DATA
RR0-RR7
SEL
IC507, 607
SAM WR G DATA
WG0-WG7
G0-G7
IC521, 610
MM RD G DATA
RG0-RG7
IC506, 606
SAM WR B DATA
WB0-WB7
B0-B7
IC520, 609
MM RD B DATA
RB0-RB7
IC500, 600
FRAME MEMORY (1st field)
IC501, 601
FRAME MEMORY (2nd field)
IC502, 602
IC503, 603
IC504, 604
IC505, 605
SAM PORT
MA0-MA8
MR0-MR7
MG0-MG7
MB0-MB7
RAS L
WE RL
SE L
OE L
RAS U
WE RU
SE U
OE U
WE GL
WE GU
WE BL
WE BU
CAS L
SC L
DSF
CAS U
SC U
TP404 (R RAS L)
TP405 (R CAS L)
TP407 (R SE L)
TP406 (R SC L)
TP408 (A7)
A7
CPU DATA
D0
CPU ADDR
UWR
URD
C SYNC
TP401 (14M)
14M
TP402 (28M)
28M
1
SY-194, CN1-21D
CN1-21D
SY-194, CN1-22A
SY-194, CN1-22B
SY-194, CN1-22C
SY-194, CN1-22D
SY-194, CN1-23A
SY-194, CN1-23B
SY-194, CN1-23C
SY-194, CN1-23D
CN1-22A
CN1-22B
CN1-22C
CN1-22D
CN1-23A
CN1-23B
CN1-23C
CN1-23D
HVRD 7
HVRD 6
HVRD 5
HVRD 4
HVRD 3
HVRD 2
HVRD 1
HVRD 0
SY-194, CN1-24A
SY-194, CN1-24B
SY-194, CN1-24C
SY-194, CN1-24D
SY-194, CN1-25A
SY-194, CN1-25B
SY-194, CN1-25C
SY-194, CN1-25D
CN1-24A
CN1-24B
CN1-24C
CN1-24D
CN1-25A
CN1-25B
CN1-25C
CN1-25D
HVGD 7
HVGD 6
HVGD 5
HVGD 4
HVGD 3
HVGD 2
HVGD 1
HVGD 0
SY-194, CN2-1A
SY-194, CN2-1B
SY-194, CN2-1C
SY-194, CN2-1D
SY-194, CN2-2A
SY-194, CN2-2B
SY-194, CN2-2C
SY-194, CN2-2D
CN2-1A
CN2-1B
CN2-1C
CN2-1D
CN2-2A
CN2-2B
CN2-2C
CN2-2D
HVBD 7
HVBD 6
HVBD 5
HVBD 4
HVBD 3
HVBD 2
HVBD 1
HVBD 0
SY-194, CN2-3A
SY-194, CN2-3B
SY-194, CN2-3C
SY-194, CN2-3D
SY-194, CN2-4A
SY-194, CN2-4B
SY-194, CN2-4C
SY-194, CN2-4D
CN2-3A
CN2-3B
CN2-3C
CN2-3D
CN2-4A
CN2-4B
CN2-4C
CN2-4D
IB 7
IB 6
IB 5
IB 4
IB 3
IB 2
IB 1
IB 0
SY-194, CN2-5A
SY-194, CN2-5B
SY-194, CN2-5C
SY-194, CN2-5D
SY-194, CN1-20D
SY-194, CN1-21A
SY-194, CN1-21B
SY-194, CN1-21C
CN2-5A
CN2-5B
CN2-5C
CN2-5D
CN1-20D
CN1-21A
CN1-21B
CN1-21C
ACK 1
REQ 1
ACK 2
REQ 2
FMC CS
FMW CS
RESET
WAIT


IC509, 510, 612
BUFF
MA0–MA8
MR0–MR7
MG0–MG7
MB0–MB7
IC447
FF
D3–D6
IC455
BUFF
MM SEL0
MM SEL1
MM SEL2
MM SEL3
CN3-15A FM-35, CN2-15A
CN3-15B FM-35, CN2-15B
CN3-15C FM-35, CN2-15C
CN3-15D FM-35, CN2-15D
IC400
CPU DATA
D0–D7
DA0–DA7
CPU ADDR
AD0–AD11
MAD0–MAD8
IC452, 456
BUFF
MEM.ADDR 0 CN2-8D FM-35, CN1-8D
MEM.ADDR 1 CN2-8C FM-35, CN1-8C
MEM.ADDR 2 CN2-8B FM-35, CN1-8B
MEM.ADDR 3 CN2-8A FM-35, CN1-8A
MEM.ADDR 4 CN2-7D FM-35, CN1-7D
MEM.ADDR 5 CN2-7C FM-35, CN1-7C
MEM.ADDR 6 CN2-7B FM-35, CN1-7B
MEM.ADDR 7 CN2-7A FM-35, CN1-7A
MEM.ADDR 8 CN2-6D FM-35, CN1-6D
UWR
URD
C SYNC
WR-
RD-
CSNC
TP401 (14M)
IC429
BUFF
14M
SCK
F.M.C
TP402 (28M)
SY-194, CN1-21D CN1-21D 28M
RCK
MDR0–MDR7
MEM.R DATA 0 CN3-14B FM-35, CN2-14B
MEM.R DATA 1 CN3-14A FM-35, CN2-14A
MEM.R DATA 2 CN3-13D FM-35, CN2-13D
MEM.R DATA 3 CN3-13C FM-35, CN2-13C
MEM.R DATA 4 CN3-13B FM-35, CN2-13B
MEM.R DATA 5 CN3-13A FM-35, CN2-13A
MEM.R DATA 6 CN3-12D FM-35, CN2-12D
MEM.R DATA 7 CN3-12C FM-35, CN2-12C
MDG0–MDG7
MEM.G DATA 0 CN3-12B FM-35, CN2-12B
MEM.G DATA 1 CN3-12A FM-35, CN2-12A
MEM.G DATA 2 CN3-11D FM-35, CN2-11D
MEM.G DATA 3 CN3-11C FM-35, CN2-11C
MEM.G DATA 4 CN3-11B FM-35, CN2-11B
MEM.G DATA 5 CN3-11A FM-35, CN2-11A
MEM.G DATA 6 CN3-10D FM-35, CN2-10D
MEM.G DATA 7 CN3-10C FM-35, CN2-10C
MDB0–MDB7
MEM.B DATA 0 CN3-10B FM-35, CN2-10B
MEM.B DATA 1 CN3-10A FM-35, CN2-10A
MEM.B DATA 2 CN3-9D FM-35, CN2-9D
MEM.B DATA 3 CN3-9C FM-35, CN2-9C
MEM.B DATA 4 CN3-9B FM-35, CN2-9B
MEM.B DATA 5 CN3-9A FM-35, CN2-9A
MEM.B DATA 6 CN3-8D FM-35, CN2-8D
MEM.B DATA 7 CN3-8C FM-35, CN2-8C
SY-194, CN1-22A CN1-22A HVRD 7
SY-194, CN1-22B CN1-22B HVRD 6
SY-194, CN1-22C CN1-22C HVRD 5
SY-194, CN1-22D CN1-22D HVRD 4
SY-194, CN1-23A CN1-23A HVRD 3
SY-194, CN1-23B CN1-23B HVRD 2
SY-194, CN1-23C CN1-23C HVRD 1
SY-194, CN1-23D CN1-23D HVRD 0
HVR7–HVR0
MWR
MEM.R/W CN3-1A FM-35, CN2-1A
SY-194, CN1-24A CN1-24A HVGD 7
SY-194, CN1-24B CN1-24B HVGD 6
SY-194, CN1-24C CN1-24C HVGD 5
SY-194, CN1-24D CN1-24D HVGD 4
SY-194, CN1-25A CN1-25A HVGD 3
SY-194, CN1-25B CN1-25B HVGD 2
SY-194, CN1-25C CN1-25C HVGD 1
SY-194, CN1-25D CN1-25D HVGD 0
HVG7–HVG0
IC401–429, 436, IC448–451
MEMORY CONTROL SIGNAL DECODER
MEM ON
WE RL
WE GL
WE BL
WE RU
WE GU
WE BU
RAS L
RAS U
CAS L
CAS U
OE L
OE U
SE L
SE U
SC L
SC U
DSF
SEL
WE
SY-194, CN2-1A CN2-1A HVBD 7
SY-194, CN2-1B CN2-1B HVBD 6
SY-194, CN2-1C CN2-1C HVBD 5
SY-194, CN2-1D CN2-1D HVBD 4
SY-194, CN2-2A CN2-2A HVBD 3
SY-194, CN2-2B CN2-2B HVBD 2
SY-194, CN2-2C CN2-2C HVBD 1
SY-194, CN2-2D CN2-2D HVBD 0
HVB7–HVB0
IC448
INV
RAS-
CAS-
OE-
WE-
IC452–455
BUFF
MM ON CN3-14D FM-35, CN2-14D
U/L CN3-5A FM-35, CN2-5A
RAS CN3-5C FM-35, CN2-5C
CAS CN3-5D FM-35, CN2-5D
OE CN3-6A FM-35, CN2-6A
WE CN3-6B FM-35, CN2-6B
DSF CN3-6C FM-35, CN2-6C
SAM RD CONT CN3-4D FM-35, CN2-4D
SAM WR CONT CN3-4C FM-35, CN2-4C
RF CONT CN3-4B FM-35, CN2-4B
RAM CONT CN3-4A FM-35, CN2-4A
SC RD CN3-7D FM-35, CN2-7D
SC WR CN3-7C FM-35, CN2-7C
SE RD CN3-7B FM-35, CN2-7B
SE WR CN3-7A FM-35, CN2-7A
SAM MODE 0 CN3-2A FM-35, CN2-2A
SAM MODE 1 CN3-1D FM-35, CN2-1D
SAM MODE 2 CN3-1C FM-35, CN2-1C
SAM MODE 3 CN3-1B FM-35, CN2-1B
RAM R CN3-2D FM-35, CN2-2D
RAM G CN3-2C FM-35, CN2-2C
RAM B CN3-2B FM-35, CN2-2B
RAM MEM.SEL 0 CN3-3D FM-35, CN2-3D
RAM MEM.SEL 1 CN3-3C FM-35, CN2-3C
RAM MEM.SEL 2 CN3-3B FM-35, CN2-3B
RAM MEM.SEL 3 CN3-3A FM-35, CN2-3A
SMU CN3-8A FM-35, CN2-8A
SY-194, CN2-3A CN2-3A IB 7
SY-194, CN2-3B CN2-3B IB 6
SY-194, CN2-3C CN2-3C IB 5
SY-194, CN2-3D CN2-3D IB 4
SY-194, CN2-4A CN2-4A IB 3
SY-194, CN2-4B CN2-4B IB 2
SY-194, CN2-4C CN2-4C IB 1
SY-194, CN2-4D CN2-4D IB 0
IB7–IB0
HU
DSF
SMRC
SMWC
RFC
RAMC
SC0
SC1
SE0-
SE1-
SAM0
SAM1
SAM2
SAM3
RAMR
RAMG
RAMB
RMS0
RMS1
RMS2
RMS3
SMU
CONTROL BUS
SY-194, CN2-5A CN2-5A ACK 1 AK0
SY-194, CN2-5B CN2-5B REQ 1 RQ0
SY-194, CN2-5C CN2-5C ACK 2 AK1
SY-194, CN2-5D CN2-5D REQ 2 RQ1
SY-194, CN1-20D CN1-20D FMC CS CS-
SY-194, CN1-21A CN1-21A FMW CS MCS-
SY-194, CN1-21B CN1-21B RESET RST-
SY-194, CN1-21C CN1-21C WAIT WAT-

3-8. SYSTEM PROCESS BLOCK DIAGRAM


SY-194 BOARD
DATA BUS
ADDRESS BUS
CONTROL BUS
IC30 RS-232C RECEIVER & DRIVER
IC1 MPU
IC9, 21 19.6M OSC
IC22 BUFF
IC20 RESET
(RESET) S1
S3
IC7 INV.
IC6, 7 GATE
IC10 512K EPROM
IC11 512K EPROM
IC12 256K SRAM
IC13 256K SRAM
IC16 256K SRAM
IC17 256K SRAM
IC14 64K EEPROM
IC15 64K EEPROM
IC44
IC211 TRANS-CEIVER
IC210 1M SRAM
IC213
IC214
IC200-204 ADDRESS SELECT
IC205-208 ADDRESS COUNTER
IC18 16K DUAL PORT RAM
IC212 BUFF
IC215, IC217-221 8bit PARALLEL TO SERIAL CHANGE
IC225, 227, 228, 230-233 CHARACTER MIX & COLOR SELECTOR
IC521 CHARACTER GEN.
IC501 4bit MPU
X501 4.19MHz
Q531, Q532 TRANS-CEIVER
IC404 SYNC SEP.
IC400 VD DET MM
IC403 HD DET MM
IC403 INT/EXT DET MM
IC401 EDGE DET FF
IC410 PHASE COMP.
IC412 VOLT DET
RV1 (FREQ)
Q5, IC411 FILTER & AMP
IC412
X1 VCO (28M)
IC413 BUFF
IC428 BUFF
IC414 FF
TP2 (28M)
IC429
IC419 SYNC GEN.
IC415-418, 420, 422, 429, 434 HD DELAY ADJUSTMENT
SL1-SL4
ML1-ML6
N1-N3
IC421, 425 BLANKING DELAY ADJUSTMENT
IC432 FF
Q4 DRIVER
BZ1
IC430, 431 CLK GEN.
TP3 (7M)
IC426, 433, 435 4bit COUNT
IC301 PIO
IC302 REAL TIME CLOCK
Q300
IC300 PLD ADDRESS DECODER, DTACK GEN., INT CONTROL, LED INTERVAL COUNTER
IC303 OR
IC304 OR
IC412
IC7, 23, 44 GATE
IC108 BUFF
IC135, 306 BUFF
IC106 BUFF
IC309 BUFF
IC307 BUFF
IC109 BUFF
CN-919, CN16-3 CN2-7C TXD
CN-919, CN16-7 CN2-6D RTS
CN-919, CN16-4 CN2-7B DTR
CN-919, CN16-2 CN2-7D RXD
CN-919, CN16-8 CN2-6C CTS
CN-919, CN16-6 CN2-7A DSR
ADA-33-CN1-21B CN1-21B RESET
CN919, CN13-9 CN1-2A SYNC IN (X)
ADA-33, CN1-21D 28M
FM-35, CN1-21D/ADA-33, CN2-21D 14M
FM-35, CN1-21C/ADA-33, CN2-21C
ADA-33, CN1-11C C.BLK
ADA-33, CN1-12D VD
ADA-33, CN1-11D C.SYNC
ADA-33, CN1-12C HD
CN-919, CN4-15A … CN4-16D DIP SW2-1 … DIP SW2-8
CN-919, CN4-13A … CN4-14D DIP SW1-1 … DIP SW1-8
ADA-33, CN1-19C CAM/MEM
FAN MOTOR CN1-1A FAN SENCE
FM-35, CN1-6A MEMORY SW
CN-919.CN13-13 CN1-3C S TRIG
CN-919.CN13-15 CN1-3B FLASH OUT
CN-919.CN4-8A CN1-8A X TRIG
CN-919.CN13-16 CN1-3D SLOW S TRIG
CN-919.CN4-7A CN1-7A REMOTE (X)
GRAB
SLOW S
R CRAM
G CRAM
B CRAM
CRAM KEY
GM DATA
IM DATA
CAM/REM CTL
IRIS AUTO/MAN
ADCS
S DATA1
M DATA1
SCK1
EOC
S DATA (X)
LUT W CS (R)
LUT W CS (G)
LUT W CS (B)
FMC CS
FMW CS
MON LUT W CS (R)
MON LUT W CS (G)
MON LUT W CS (B)
FMC WAIT
FLASH IN
LED (−)


DATA BUS
ADDRESS BUS
CONTROL BUS
IC225, 227, 228, 230–233
CHARACTER MIX & COLOR SELECTOR
IC521
CHARACTER GEN.
IC642
IC612
FF
IC641, IC642
WRITE CONTROL GEN.
IC613
RESET
IC601
BMC1 (GATE ARRAY)
28M(1)
BMC1 RST
BMW1
BC1 INT
BC1 WAIT
BMC1
IC606, 607
BM1
IC632, 637, 640
DBR-RGB CHANGE
RGBC
IC602
SP (GATE ARRAY)
14M(2)
IC618
SW1
IC619
TP604 (RQ3)
TP605 (AK3)
TP606 (RQ4)
TP607 (AK4)
IC610
IC611
IC603
OPERATIONAL IC
IC635
BUFF
IC637, 638
GATE
IC604
BMC2 (GATE ARRAY)
28M(2)
BMC2 RST
BMW2
BC2 INT
BC2 WAIT
BMC2
IC608, 609
BM2
IC605
SPC
19.6M
SPC INT
IC634
DMA R/W
IC632
INV.
IC400
MM
D41 (ACCESS)
IC614, 615, 620–633
DMA TIMING CONT.
IC643–646
DATA SELECT
SW2
IC616
IC617
TP608 (RQ5)
TP609 (AK5)
TP610 (D5)
TP611 (RQ6)
TP612 (AK6)
TP613 (D6)
SCSI
CN18
CN17
IC308
IC305, 306
IC306
IC309
IC307
IC600
HKN1 (GATE ARRAY)
IC636
HKN2 (GATE ARRAY)
IC639
HV IC
TP603 (AK2)
TP602 (RQ2)
TP601 (AK1)
TP600 (RQ1)
14M(1)
ADA-33, CN1-10A
ADA-33, CN1-10B
ADA-33, CN1-10C
ADA-33, CN1-10D
CN-919, CN14-7
CN-919, CN14-12
CN-919, CN4-5C
CN-919, CN4-5D
CN-919, CN4-6A
CN-919, CN4-6B
CN-919, CN4-6C
CN-919, CN13-17
ADA-33, CN1-17A … CN1-18D
ADA-33, CN1-16D … CN1-14A
ADA-33, CN1-19A
ADA-33, CN1-19B
ADA-33, CN1-19D
ADA-33, CN1-20A … CN1-13C
ADA-33, CN1-21C
CN-919, CN13-14
PE-18, CN1-2
ADA-33, CN2-4D … CN2-3A
ADA-33, CN2-5D
ADA-33, CN2-5C
ADA-33, CN1-23D … CN1-22A
ADA-33, CN1-25D … CN1-24A
ADA-33, CN2-2D … CN2-1A
ADA-33, CN2-5B
ADA-33, CN2-5A

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. CAMERA SECTION

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

- **For Printed Wiring Boards.**
- ▨ : Soldering Side.
- ░ : Component Side.

- **For Schematic Diagrams.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/10W unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted.
  pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊟ : nonflammable resistor.
- ⊟ : fusibe resistor.
- ☐ : panel designation.
- ☐ : adjustment for repeair.
- ——— : B+ Line.
- - - - - : B− Line.
- Voltages are dc between ground and measurement points.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.

The condition of Voltage Measurement

(1) Set the OPE/ADJ switch (SW1) on the AT-83 board to ADJ and turn on the processor power.
(2) Set the OPE/ADJ switch to OPE in the state of step (1) and press the "FUNC DOWN" switch on the rear panel.
A color-bar signal is then displayed on the monitor.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

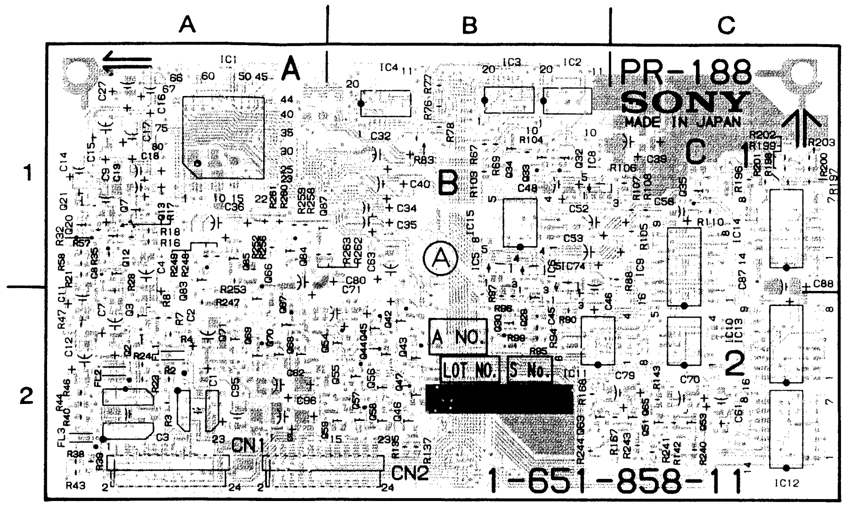
Note: Les composants identifiés par une trame et par une marque ⚠ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.

PR-188 (VIDEO PROCESS)

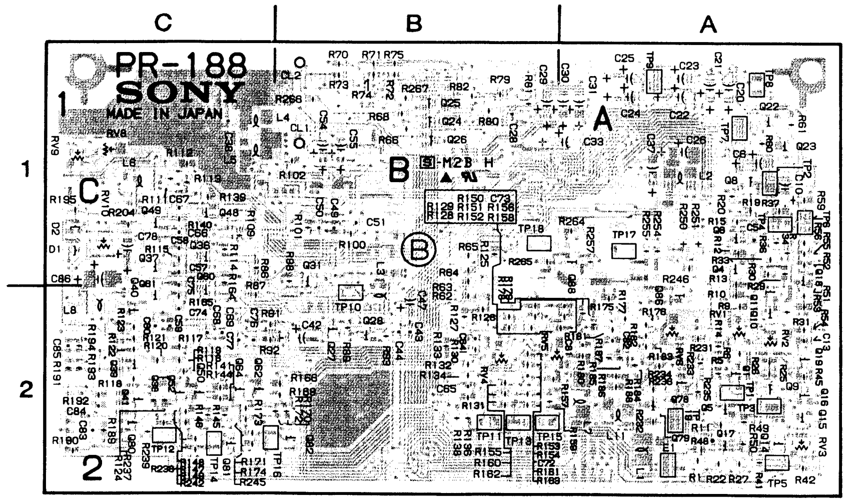
PR-188(1-651-858-11)

CN1	A-2	Q42	B-2	*TP16	C-2
CN2	A-2	Q43	B-2	*TP17	A-1
		Q44	B-2	*TP18	B-1
*D1	C-1	Q45	B-2	*TP19	A-2
*D2	C-1	Q46	B-2		
		Q47	B-2		
FL1	A-2	*Q48	C-1		
FL2	A-2	*Q49	C-1		
FL3	A-2	*Q50	C-2		
		Q51	C-2		
IC1	A-1	*Q52	C-2		
IC2	B-1	Q53	C-2		
IC3	B-1	Q54	B-2		
IC4	B-1	Q55	B-2		
IC5	B-1	Q56	B-2		
IC6	B-1	Q57	B-2		
IC7	B-1	Q58	B-2		
IC8	B-1	Q59	B-2		
IC9	C-1	*Q60	C-2		
IC10	C-2	*Q61	C-2		
IC11	B-2	*Q62	C-2		
IC12	C-2	Q63	B-2		
IC13	C-2	*Q64	C-2		
IC14	C-1	Q65	C-2		
IC15	B-1	Q66	A-2		
		Q67	A-2		
*Q1	A-2	Q68	A-2		
Q2	A-2	Q69	A-2		
Q3	A-2	Q70	A-2		
*Q4	A-1	Q71	A-2		
*Q5	A-2	*Q78	A-2		
*Q6	A-1	*Q79	A-2		
Q7	A-1	*Q80	C-2		
*Q8	A-1	*Q81	C-2		
*Q9	A-2	*Q82	B-2		
*Q10	A-2	Q83	A-2		
*Q11	A-2	Q84	A-1		
Q12	A-1	Q85	A-1		
Q13	A-1	*Q86	A-2		
*Q14	A-2	Q87	A-1		
*Q15	A-2	*Q88	A-1		
*Q16	A-2				
*Q17	A-2	*RV1	A-2		
*Q18	A-1	*RV2	A-2		
*Q19	A-2	*RV3	A-2		
Q20	A-1	*RV4	B-2		
Q21	A-1	*RV5	B-2		
*Q22	A-1	*RV6	A-2		
*Q23	A-1	*RV8	C-1		
*Q24	B-1	*RV9	C-1		
*Q25	B-1	*RV10	C-1		
*Q26	B-1				
*Q27	B-2	*TP1	A-2		
*Q28	B-2	*TP2	A-1		
Q29	B-2	*TP3	A-2		
Q30	B-2	*TP4	A-1		
*Q31	B-1	*TP5	A-2		
Q32	B-1	*TP6	A-1		
Q33	B-1	*TP7	A-1		
Q34	B-1	*TP8	A-1		
Q35	C-1	*TP9	A-1		
*Q36	C-1	*TP10	B-2		
*Q37	C-1	*TP11	B-2		
*Q38	C-2	*TP12	C-2		
*Q39	C-2	*TP13	B-2		
*Q40	C-2	*TP14	C-2		
*Q41	C-2	*TP15	B-2		

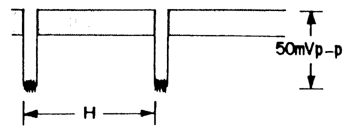
* : Soldering side


A
B
C
1
2
PR-188
SONY
MADE IN JAPAN
A NO.
LOT NO.
S No.
CN1
CN2
1-651-858-11
Ⓐ

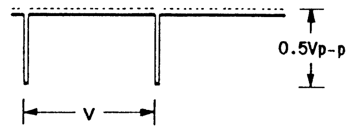
PR-188 —COMPONENT SIDE—
1-651-858-11


C
B
A
1
2
PR-188
SONY
MADE IN JAPAN
Ⓑ

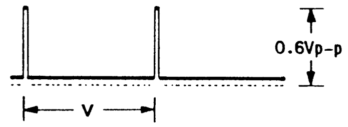
PR-188 —SOLDERING SIDE—
1-651-858-11



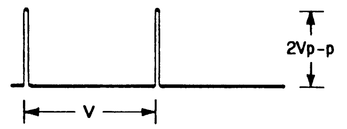
① TP1 PA(R),
TP3 PA(G),
TP5 PA(B)



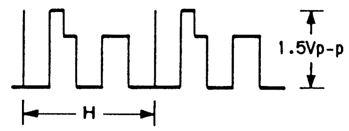
② TP2 AGC-IN-R,
TP4 AGC-IN-G,
TP6 AGC-IN-B



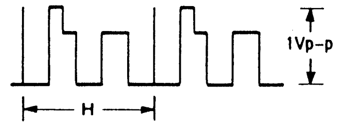
③ TP7 AGC-OUT-R,
TP8 AGC-OUT-G,
TP9 AGC-OUT-B



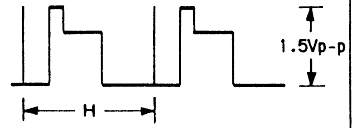
④ TP10



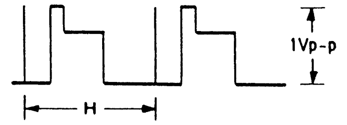
⑤ TP11 R OUT



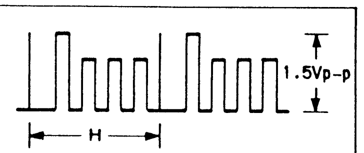
⑥ TP12 R PR OUT



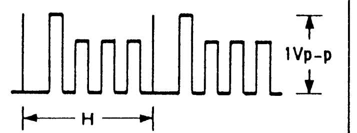
⑦ TP13 G OUT



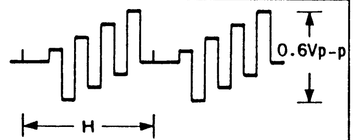
⑧ TP14 G PR OUT



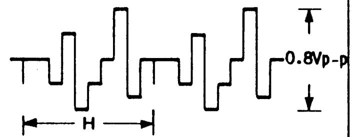
⑨ TP15 B OUT



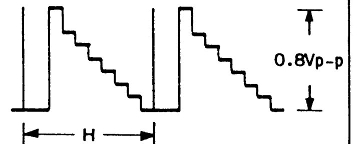
⑩ TP16 B PR OUT



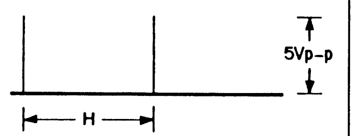
⑪ TP17 B-Y



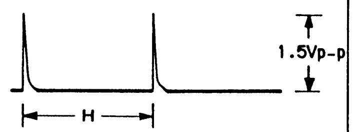
⑫ TP18 R-Y



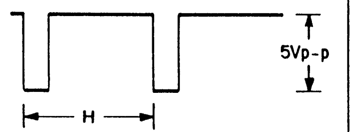
⑬ TP19 Y



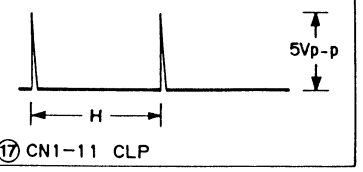
⑭ CN2-12 CLP5



⑮ CN1-13 CLP3

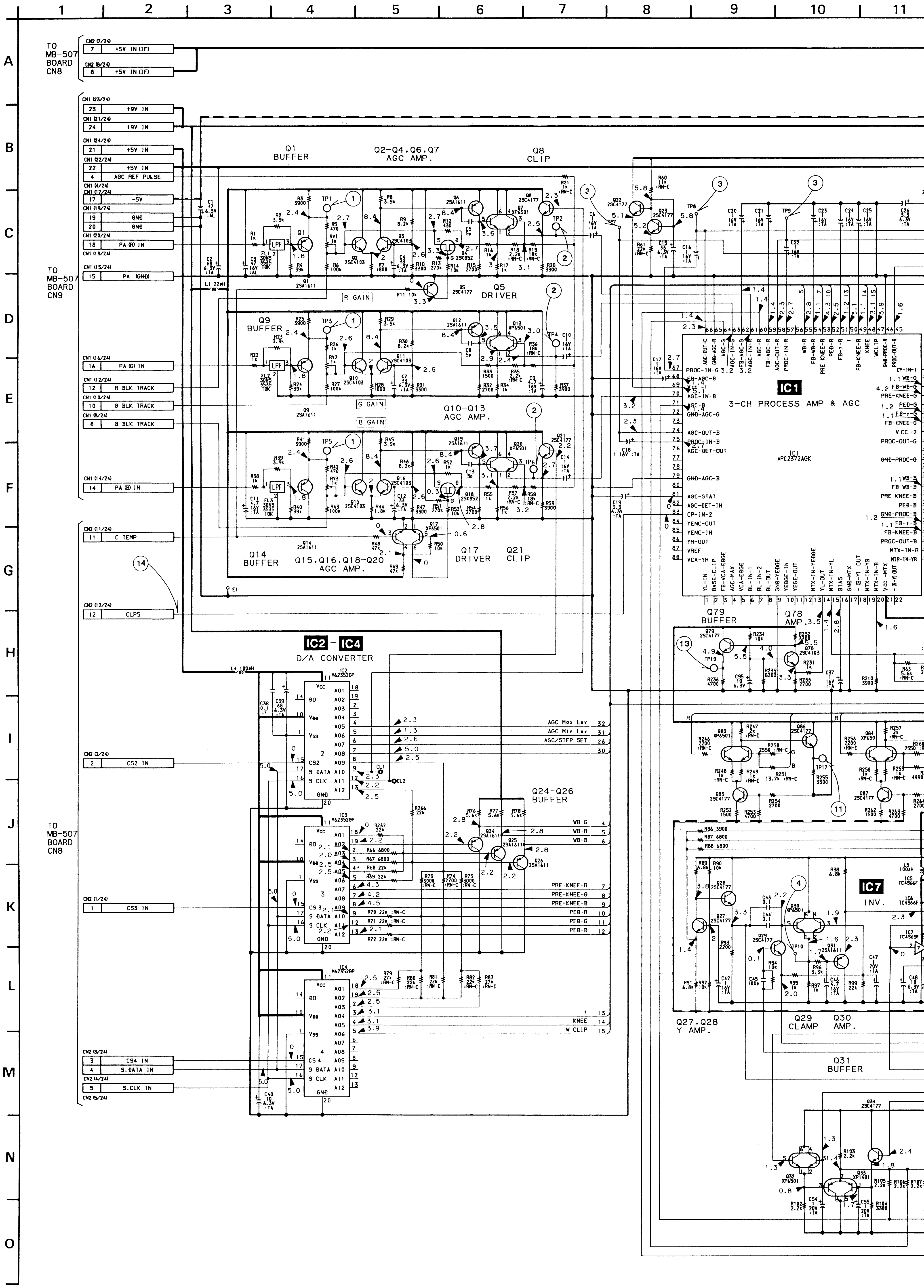


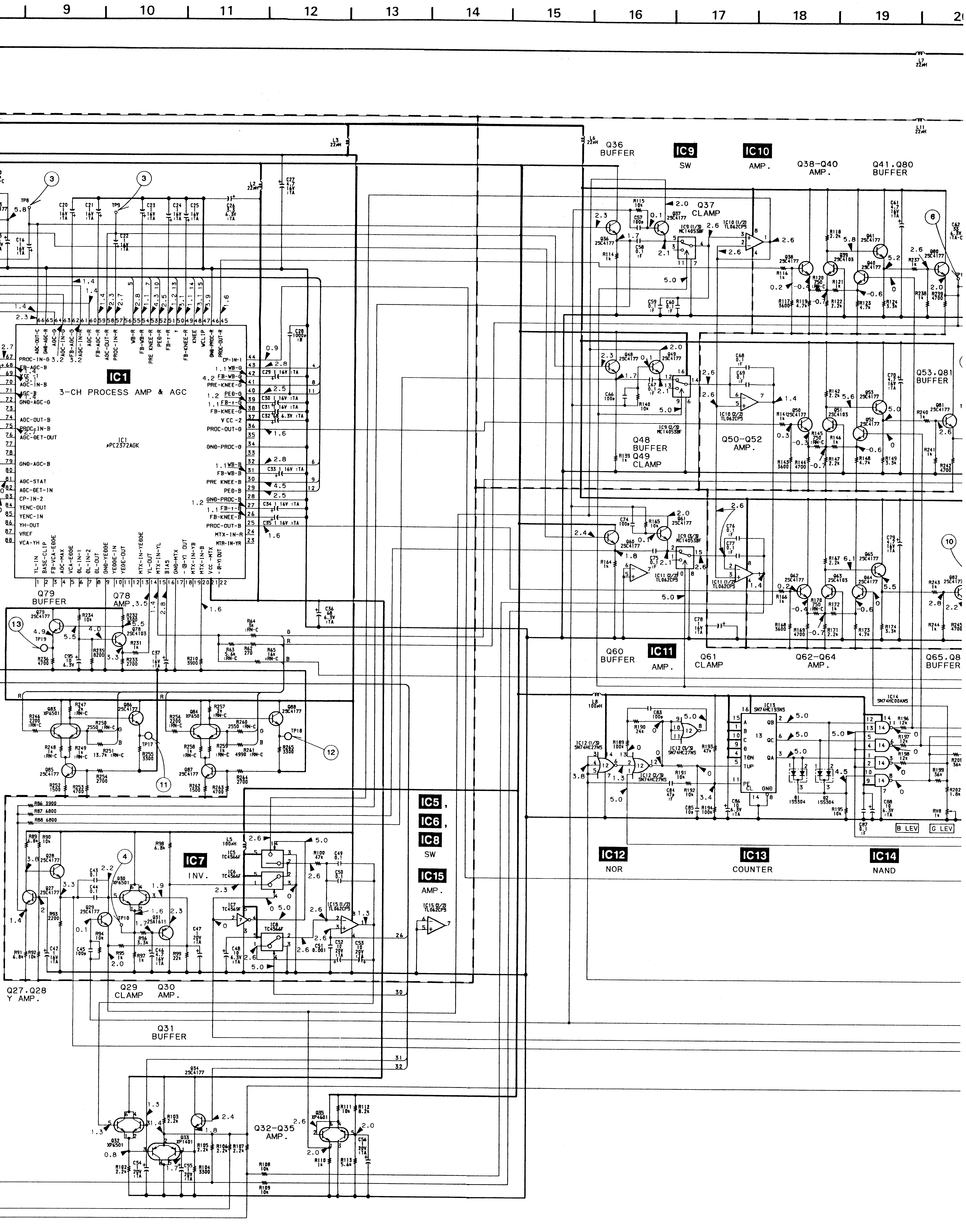
⑯ CN2-22 BLK

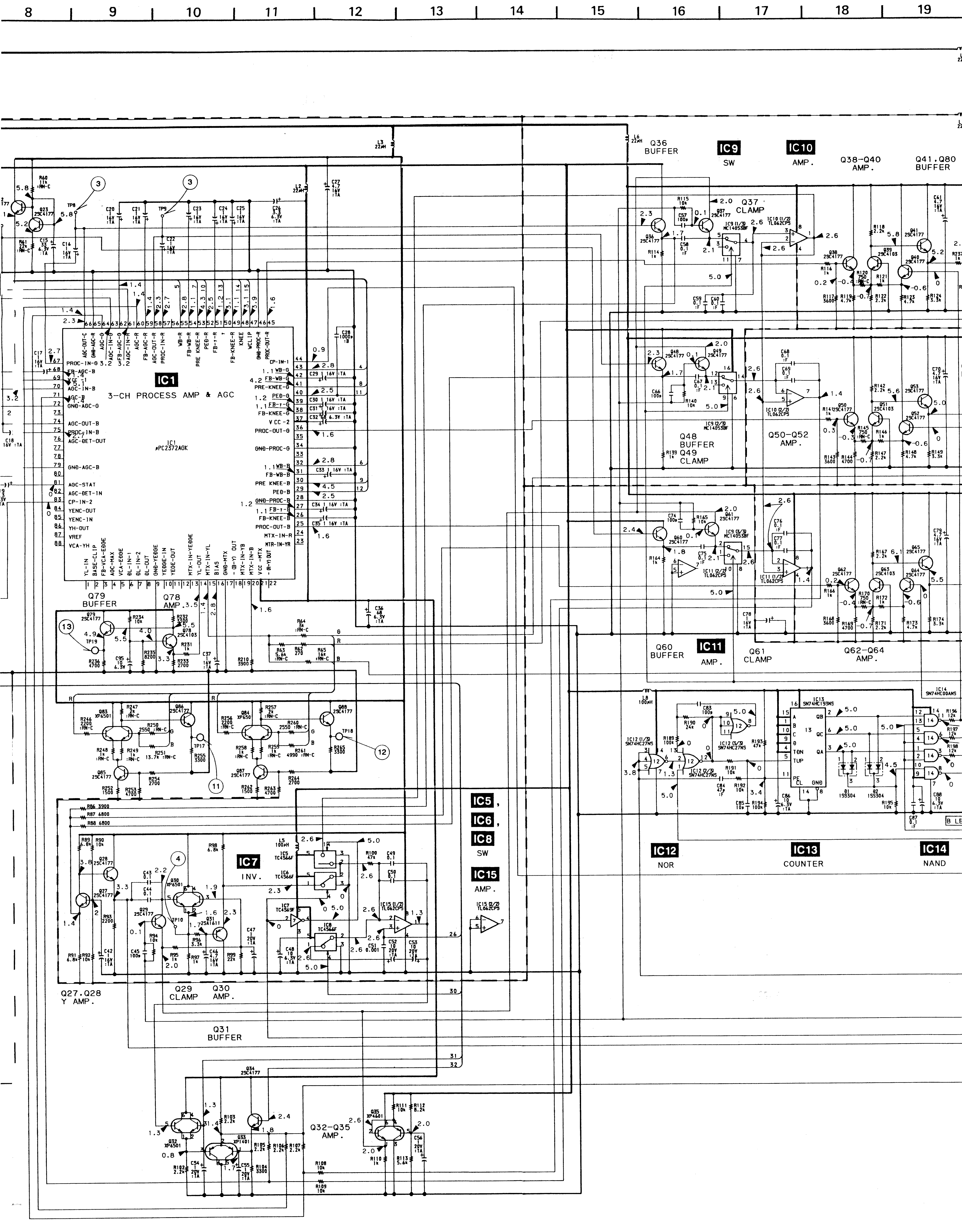


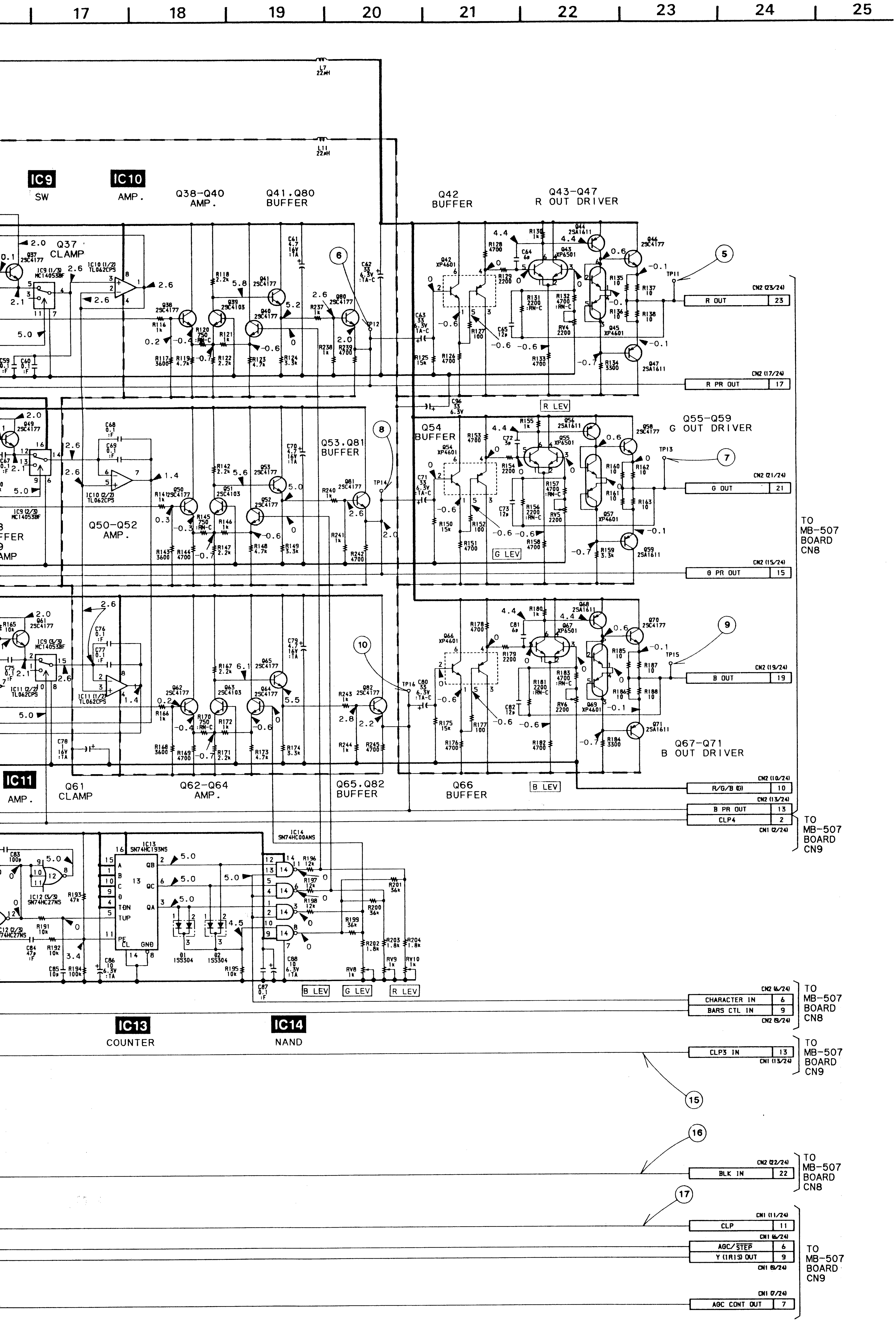
⑰ CN1-11 CLP

PR-188 (VIDEO PROCESS)

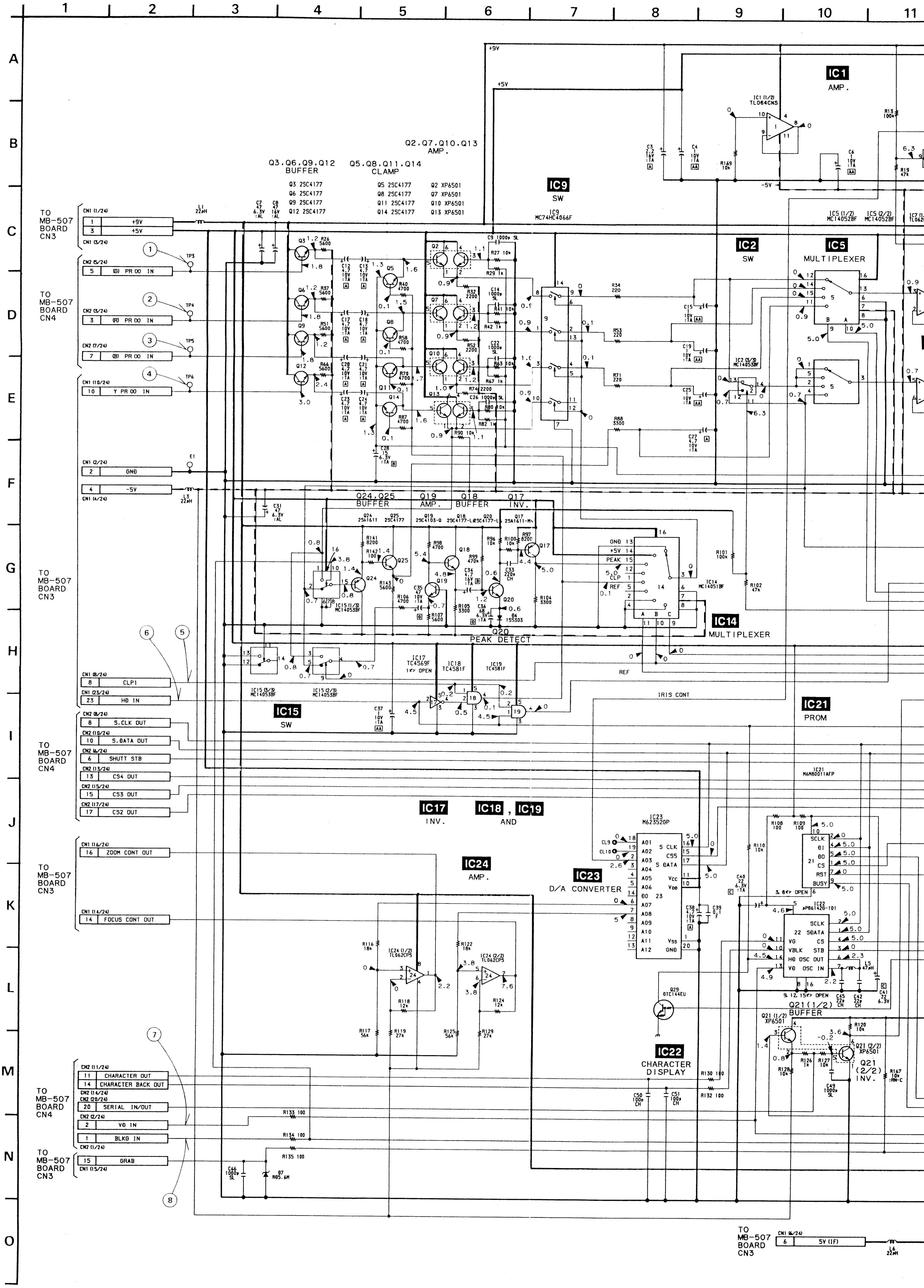

1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
TO MB-507 BOARD CN8
+5V IN (IF)
TO MB-507 BOARD CN9
+9V IN
+5V IN
AGC REF PULSE
-5V
GND
PA (R) IN
PA (GND)
PA (G) IN
R BLK TRACK
G BLK TRACK
B BLK TRACK
PA (B) IN
C TEMP
CLPS
CS2 IN
CS3 IN
CS4 IN
S.DATA IN
S.CLK IN
Q1 BUFFER
Q2-Q4,Q6,Q7 AGC AMP.
Q8 CLIP
Q5 DRIVER
R GAIN
Q9 BUFFER
G GAIN
B GAIN
Q10-Q13 AGC AMP.
Q14 BUFFER
Q15,Q16,Q18-Q20 AGC AMP.
Q17 DRIVER
Q21 CLIP
LPF
IC2 - IC4
D/A CONVERTER
IC2 M62352GP
IC3 M62352GP
IC4 M62352GP
AGC Max Lev
AGC Min Lev
AGC/STEP SET
Q24-Q26 BUFFER
WB-G
WB-R
WB-B
PRE-KNEE-R
PRE-KNEE-G
PRE-KNEE-B
PED-R
PED-G
PED-B
KNEE
W CLIP
IC1
3-CH PROCESS AMP & AGC
IC1 µPC2372AGK
Q79 BUFFER
Q78 AMP.
IC7
INV.
Q27,Q28 Y AMP.
Q29 CLAMP
Q30 AMP.
Q31 BUFFER

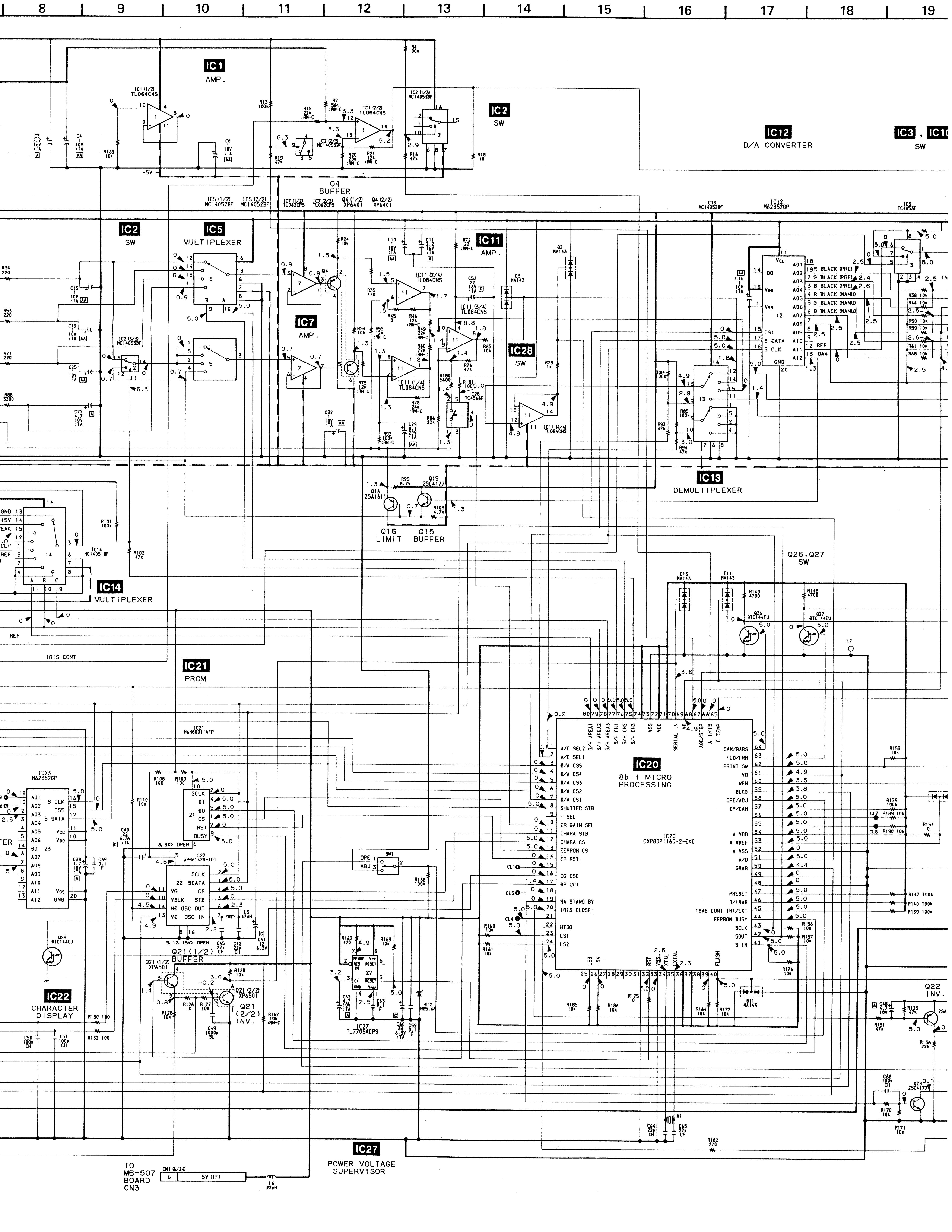

9
10
11
12
13
14
15
16
17
18
19
IC1
3-CH PROCESS AMP & AGC
IC1
μPC2372AGK
Q79
BUFFER
Q78
AMP.
Q36
BUFFER
IC9
SW
IC10
AMP.
Q37
CLAMP
Q38-Q40
AMP.
Q41,Q80
BUFFER
Q48
BUFFER
Q49
CLAMP
Q50-Q52
AMP.
Q53,Q81
BUFFER
Q60
BUFFER
IC11
AMP.
Q61
CLAMP
Q62-Q64
AMP.
Q65,Q8
BUFFER
IC5,
IC6,
IC8
SW
IC15
AMP.
IC7
INV.
Q27,Q28
Y AMP.
Q29
CLAMP
Q30
AMP.
Q31
BUFFER
Q32-Q35
AMP.
IC12
NOR
IC13
COUNTER
IC14
NAND
IC13
SN74HC193NS
IC14
SN74HC00ANS
B LEV
G LEV
L3
22μH
L6
22μH
L7
22μH
L11
22μH
L5
100μH
L8
100μH

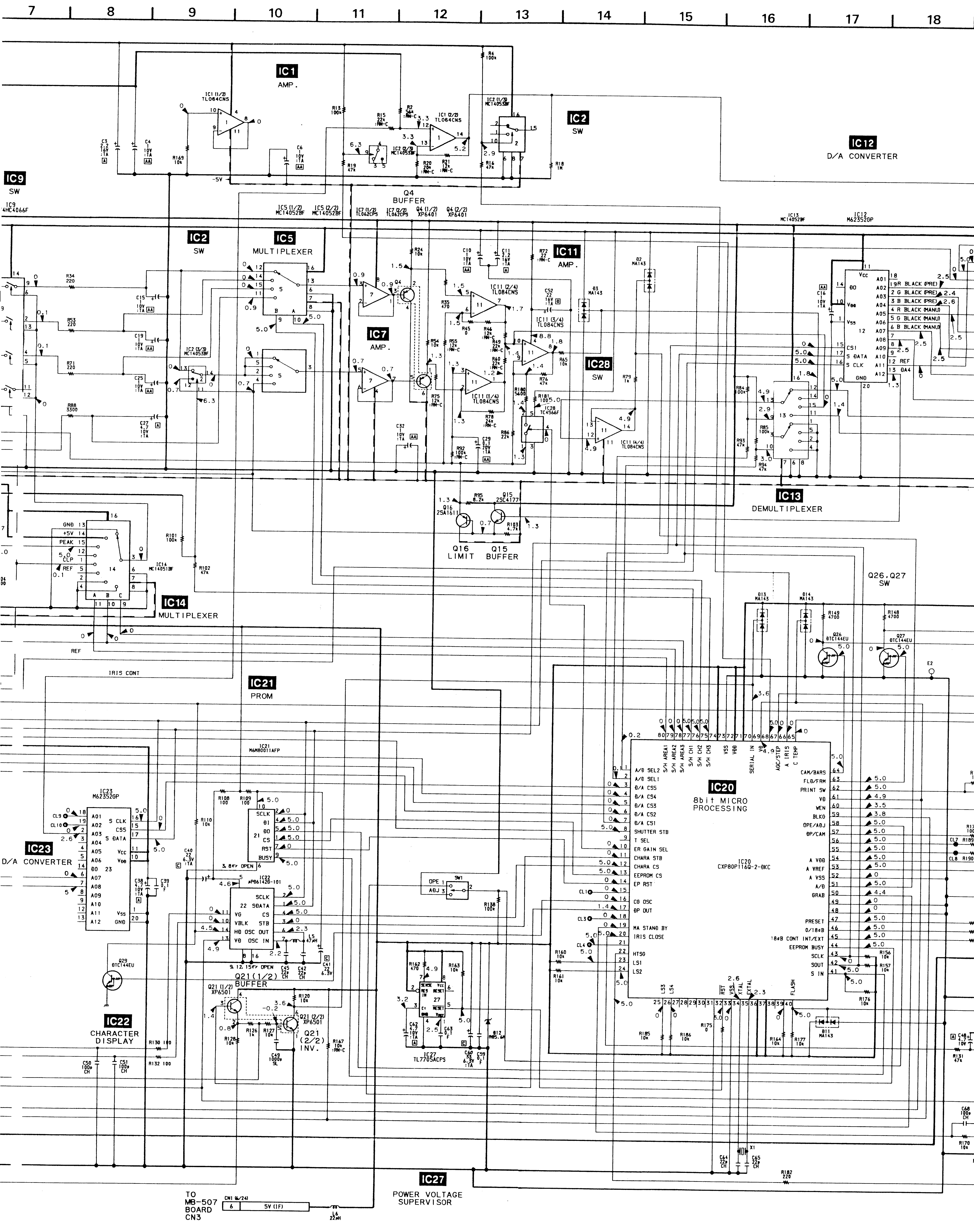

8
9
10
11
12
13
14
15
16
17
18
19
IC1
3-CH PROCESS AMP & AGC
IC1 μPC2372AGK
Q79 BUFFER
Q78 AMP.
Q36 BUFFER
IC9 SW
IC10 AMP.
Q38–Q40 AMP.
Q41,Q80 BUFFER
Q37 CLAMP
IC9 (1/3) MC14053BF
IC10 (1/2) TL062CPS
Q48 BUFFER
Q49 CLAMP
Q50–Q52 AMP.
IC10 (2/2) TL062CPS
IC9 (2/3) MC14053BF
IC9 (3/3) MC14053BF
IC11 (2/2) TL062CPS
IC11 (1/2) TL062CPS
Q60 BUFFER
IC11 AMP.
Q61 CLAMP
Q62–Q64 AMP.
IC14 SN74HC00ANS
IC13 SN74HC193NS
IC12 (1/3) SN74HC27NS
IC12 (2/3) SN74HC27NS
IC12 (3/3) SN74HC27NS
IC12 NOR
IC13 COUNTER
IC14 NAND
D1 1SS304
D2 1SS304
IC5, IC6, IC8 SW
IC15 AMP.
IC15 (2/2) TL062CPS
IC15 (1/2) TL062CPS
IC5 TC4S66F
IC6 TC4S66F
IC7 TC4S69F
IC8 TC4S66F
IC7 INV.
Q27,Q28 Y AMP.
Q29 CLAMP
Q30 AMP.
Q31 BUFFER
Q32–Q35 AMP.
Q32 XP6501
Q33 XP1401
Q34 2SC4177
Q35 XP4601
TP8
TP9
TP10
TP17
TP18
TP19
L3 22μH
L2 22μH
L5 100μH
L6 22μH
L8 100μH
B LE

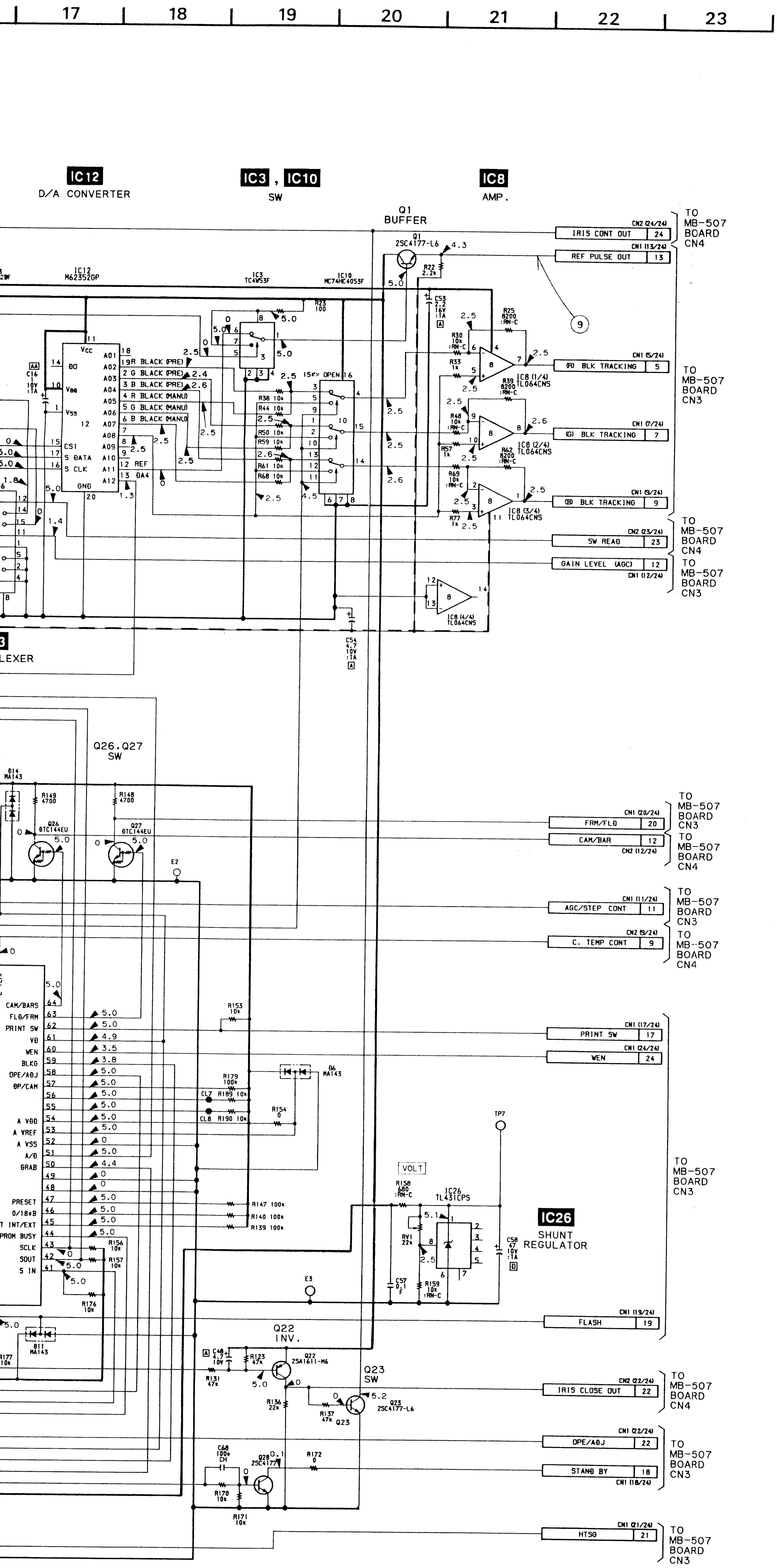

17
18
19
20
21
22
23
24
25
IC9
SW
IC10
AMP.
Q38-Q40
AMP.
Q41.Q80
BUFFER
Q42
BUFFER
Q43-Q47
R OUT DRIVER
Q37
CLAMP
Q54
BUFFER
Q55-Q59
G OUT DRIVER
Q53.Q81
BUFFER
Q50-Q52
AMP.
R LEV
G LEV
B LEV
Q61
CLAMP
Q62-Q64
AMP.
Q65.Q82
BUFFER
Q66
BUFFER
Q67-Q71
B OUT DRIVER
IC11
AMP.
IC13
COUNTER
IC14
NAND
R OUT
R PR OUT
G OUT
B PR OUT
B OUT
R/G/B (G)
B PR OUT
CLP4
CHARACTER IN
BARS CTL IN
CLP3 IN
BLK IN
CLP
AGC/STEP
Y (IRIS) OUT
AGC CONT OUT
TO MB-507 BOARD CN8
TO MB-507 BOARD CN9
TP11
TP12
TP13
TP14
TP15
TP16
5
6
7
8
9
10
15
16
17

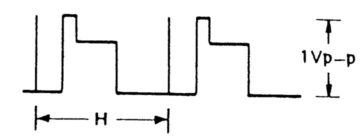
AT-83 (SYSTEM CONTROL)


IC1 AMP.
IC1 (1/2) TL064CNS
IC2 SW
IC2 (3/3) MC14053BF
IC5 MULTIPLEXER
IC5 (1/2) MC14052BF
IC5 (2/2) MC14052BF
IC9 SW
IC9 MC74HC4066F
Q2.Q7.Q10.Q13 AMP.
Q3.Q6.Q9.Q12 BUFFER
Q5.Q8.Q11.Q14 CLAMP
Q3 2SC4177
Q6 2SC4177
Q9 2SC4177
Q12 2SC4177
Q5 2SC4177
Q8 2SC4177
Q11 2SC4177
Q14 2SC4177
Q2 XP6501
Q7 XP6501
Q10 XP6501
Q13 XP6501
Q24.Q25 BUFFER
Q19 AMP.
Q18 BUFFER
Q17 INV.
Q24 2SA1611
Q25 2SC4177
Q19 2SC4103-Q
Q18 2SC4177-L
Q20 2SC4177-L
Q17 2SA1611-M
Q20 PEAK DETECT
D4 1SS303
IC14 MULTIPLEXER
IC14 MC14051BF
IC15 SW
IC15 (1/3) MC14053BF
IC15 (2/3) MC14053BF
IC15 (3/3) MC14053BF
IC17 INV.
IC17 TC4S69F
IC18 TC4S81F
IC19 TC4S81F
IC18, IC19 AND
IC21 PROM
IC21 M6M80011AFP
IC22 CHARACTER DISPLAY
IC22 μPD61426-101
IC23 D/A CONVERTER
IC23 M62352GP
IC24 AMP.
IC24 (1/2) TL062CPS
IC24 (2/2) TL062CPS
Q21 (1/2) BUFFER
Q21 (1/2) XP6501
Q21 (2/2) INV.
Q21 (2/2) XP6501
Q29 DTC144EU
TO MB-507 BOARD CN3
CN1 (1/24) 1 +9V
CN1 (3/24) 3 +5V
TO MB-507 BOARD CN4
CN2 (5/24) 5 (G) PR (X) IN
CN2 (3/24) 3 (R) PR (X) IN
CN2 (7/24) 7 (B) PR (X) IN
CN1 (10/24) 10 Y PR (X) IN
CN1 (2/24) 2 GND
CN1 (4/24) 4 -5V
TO MB-507 BOARD CN3
CN1 (8/24) 8 CLP1
CN1 (23/24) 23 HD IN
TO MB-507 BOARD CN4
CN2 (8/24) 8 S.CLK OUT
CN2 (10/24) 10 S.DATA OUT
CN2 (6/24) 6 SHUTT STB
CN2 (13/24) 13 CS4 OUT
CN2 (15/24) 15 CS3 OUT
CN2 (17/24) 17 CS2 OUT
TO MB-507 BOARD CN3
CN1 (16/24) 16 ZOOM CONT OUT
CN1 (14/24) 14 FOCUS CONT OUT
TO MB-507 BOARD CN4
CN2 (11/24) 11 CHARACTER OUT
14 CHARACTER BACK OUT
CN2 (14/24)
CN2 (20/24) 20 SERIAL IN/OUT
CN2 (2/24) 2 VD IN
1 BLKG IN
CN2 (1/24)
TO MB-507 BOARD CN3
CN1 (15/24) 15 GRAB
TO MB-507 BOARD CN3
CN1 (6/24) 6 5V (IF)
TP3
TP4
TP5
TP6
E1
L1 22μH
L3 22μH
L5 47μH
L6 22μH
D7 RD5.6M
IRIS CONT
REF
+9V
+5V
-5V
GND
PEAK
CLP
SCLK
SDATA
CS
RST
BUSY
VG
VBLK
STB
HD OSC OUT
VD OSC IN
①
②
③
④
⑤
⑥
⑦
⑧

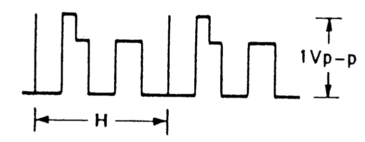
8
9
10
11
12
13
14
15
16
17
18
19
IC1
AMP.
IC2
SW
IC12
D/A CONVERTER
IC3 , IC1
SW
Q4
BUFFER
IC2
SW
IC5
MULTIPLEXER
IC7
AMP.
IC11
AMP.
IC28
SW
IC13
DEMULTIPLEXER
Q16 LIMIT
Q15 BUFFER
IC14
MULTIPLEXER
Q26,Q27
SW
IRIS CONT
REF
IC21
PROM
IC21 M6M80011AFP
IC23 M62352GP
IC22 μPB61426-101
Q21(1/2) BUFFER
Q21 (2/2) INV.
IC20
8bit MICRO PROCESSING
IC20 CXP80P116Q-2-OKC
IC22
CHARACTER DISPLAY
IC27
POWER VOLTAGE SUPERVISOR
IC27 TL7705ACPS
TO MB-507 BOARD CN3
CN1 (6/24)
5V (IF)
Q22
INV.
OPE 1
ADJ 3
SW1
1R BLACK (PRE)
2 G BLACK (PRE)
3 B BLACK (PRE)
4 R BLACK (MANU)
5 G BLACK (MANU)
6 B BLACK (MANU)
A/D SEL2
A/D SEL1
D/A CS5
D/A CS4
D/A CS3
D/A CS2
D/A CS1
SHUTTER STB
T SEL
ER GAIN SEL
CHARA STB
CHARA CS
EEPROM CS
EP RST
CG OSC
OP OUT
MA STAND BY
IRIS CLOSE
HTSG
LS1
LS2
CAM/BARS
FLD/FRM
PRINT SW
VD
WEN
BLKG
OPE/ADJ
OP/CAM
A VDD
A VREF
A VSS
A/D
GRAB
PRESET
0/18dB
18dB CONT INT/EXT
EEPROM BUSY
SCLK
SOUT
S IN
S/H AREA1
S/H AREA2
S/H AREA3
S/H CH1
S/H CH2
S/H CH3
VSS
VDD
SERIAL IN
AGC/STEP
A IRIS
C TEMP
FLASH
XTAL
EXTAL
RST


7
8
9
10
11
12
13
14
15
16
17
18
IC1
AMP.
IC1 (1/2) TL084CNS
IC1 (2/2) TL064CNS
IC2
SW
IC2 (1/3) MC14053BF
IC2 (2/3) MC14053BF
IC2 (3/3) MC14053BF
IC12
D/A CONVERTER
IC12 M62352GP
IC9
SW
IC9 4HC4066F
Q4
BUFFER
IC5 (1/2) MC14052BF
IC5 (2/2) MC14052BF
IC7 (1/2) TL062CPS
IC7 (2/2) TL062CPS
Q4 (1/2) XP6401
Q4 (2/2) XP6401
IC5
MULTIPLEXER
IC7
AMP.
IC11
AMP.
IC11 (1/4) TL084CNS
IC11 (2/4) TL084CNS
IC11 (3/4) TL084CNS
IC11 (4/4) TL084CNS
IC28
SW
IC28 TC4S66F
D2 MA143
D3 MA143
IC13 MC14052BF
IC13
DEMULTIPLEXER
1 9R BLACK (PRE)
2 G BLACK (PRE)
3 B BLACK (PRE)
4 R BLACK (MANU)
5 G BLACK (MANU)
6 B BLACK (MANU)
Q16 2SA1611
Q15 2SC4177
Q16
LIMIT
Q15
BUFFER
IC14 MC14051BF
IC14
MULTIPLEXER
GND
+5V
PEAK
CLP
REF
IRIS CONT
Q26.Q27
SW
Q26 DTC144EU
Q27 DTC144EU
D13 MA143
D14 MA143
IC21
PROM
IC21 M6M80011AFP
IC20
8bit MICRO PROCESSING
IC20 CXP80P116Q-2-0KC
A/B SEL2
A/B SEL1
D/A CS5
D/A CS4
D/A CS3
D/A CS2
D/A CS1
SHUTTER STB
T SEL
ER GAIN SEL
CHARA STB
CHARA CS
EEPROM CS
EP RST
CG OSC
OP OUT
MA STAND BY
IRIS CLOSE
HTSG
LS1
LS2
CAM/BARS
FLD/FRM
PRINT SW
VD
WEN
BLKG
OPE/ADJ
OP/CAM
A VDD
A VREF
A VSS
A/D
GRAB
PRESET
0/18dB
18dB CONT INT/EXT
EEPROM BUSY
SCLK
SOUT
S IN
S/H AREA1
S/H AREA2
S/H AREA3
S/H CH1
S/H CH2
S/H CH3
VSS
VDD
SERIAL IN
AGC/STEP
A IRIS
C TEMP
LS3
LS4
RST
VSS
XTAL
EXTAL
FLASH
IC23 M62352GP
IC23
D/A CONVERTER
IC22 μPD6142G-101
IC22
CHARACTER DISPLAY
SCLK
SDATA
CS
STB
HD OSC OUT
VD OSC IN
VBLK
VG
BUSY
Q21 (1/2)
BUFFER
Q21 (1/2) XP6501
Q21 (2/2) XP6501
Q21 (2/2)
INV.
Q29 DTC144EU
SW1
OPE
ADJ
IC27 TL7705ACPS
IC27
POWER VOLTAGE SUPERVISOR
SENSE
RESIN
RESET
D11 MA143
D12 RD5.6M
X1
TO MB-507 BOARD CN3
CN1 (6/24)
5V (IF)
L6 22μH
E2
CL1
CL3
CL4
CL7
CL8
CL9
CL10

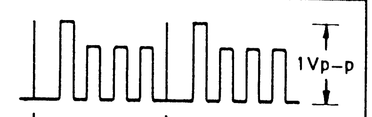

17
18
19
20
21
22
23
IC12
D/A CONVERTER
IC3 , IC10
SW
IC8
AMP.
Q1
BUFFER
Q1 2SC4177-L6
IC12 M62352GP
IC3 TC4W53F
IC10 MC74HC4053F
R22 2.2k
R23 100
C53 2.2 16V
R25 8200
R30 10k
R33 1k
R39 8200
R48 10k
R57 1k
R62 8200
R69 10k
R77 1k
IC8 (1/4) TL064CNS
IC8 (2/4) TL064CNS
IC8 (3/4) TL064CNS
IC8 (4/4) TL064CNS
C54 4.7 10V
R BLACK (PRE)
G BLACK (PRE)
B BLACK (PRE)
R BLACK (MANU)
G BLACK (MANU)
B BLACK (MANU)
REF
DA4
CS1
S DATA
S CLK
GND
IRIS CONT OUT 24
REF PULSE OUT 13
(R) BLK TRACKING 5
(G) BLK TRACKING 7
(B) BLK TRACKING 9
SW READ 23
GAIN LEVEL (AGC) 12
TO MB-507 BOARD CN4
TO MB-507 BOARD CN3
LEXER
Q26, Q27
SW
D14 MA143
R149 4700
R148 4700
Q26 DTC144EU
Q27 DTC144EU
E2
FRM/FLD 20
CAM/BAR 12
AGC/STEP CONT 11
C. TEMP CONT 9
CAM/BARS
FLD/FRM
PRINT SW
VD
WEN
BLKG
OPE/ADJ
OP/CAM
A VDD
A VREF
A VSS
A/D
GRAB
PRESET
0/18dB
INT/EXT
PROM BUSY
SCLK
SOUT
S IN
R153 10k
R179 100k
R189 10k
R190 10k
R154 0
D6 MA143
R147 100k
R140 100k
R139 100k
R156 10k
R157 10k
R176 10k
D11 MA143
R177 10k
PRINT SW 17
WEN 24
TP7
VOLT
R158 680
IC26 TL431CPS
RV1 22k
R159 10k
C57 0.1
C58 47 10V
IC26
SHUNT REGULATOR
E3
FLASH 19
Q22
INV.
C48 4.7 10V
R123 47k
Q22 2SA1611-M6
R131 47k
R136 22k
R137 47k
Q23
SW
Q23 2SC4177-L6
IRIS CLOSE OUT 22
C68 100p CH
Q28 2SC4177
R172 0
R170 10k
R171 10k
OPE/ADJ 22
STAND BY 18
HTSG 21



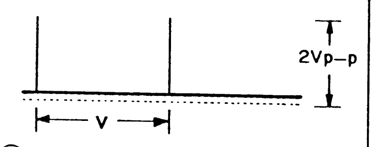
① TP3 (G) PR



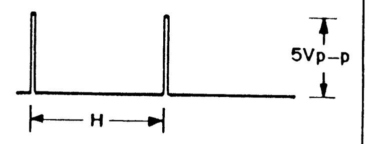
② TP4 (R) PR



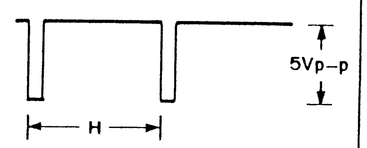
③ TP5 (B) PR



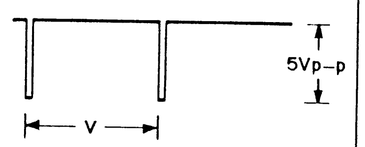
④ TP6 (Y) PR



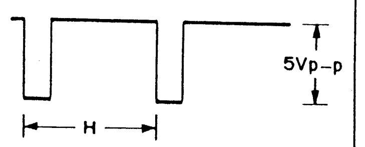
⑤ CN1-8 CLP1



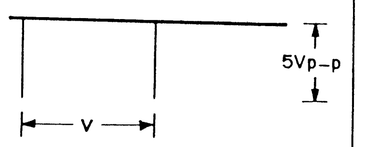
⑥ CN1-23 HD



⑦ CN2-2 VD

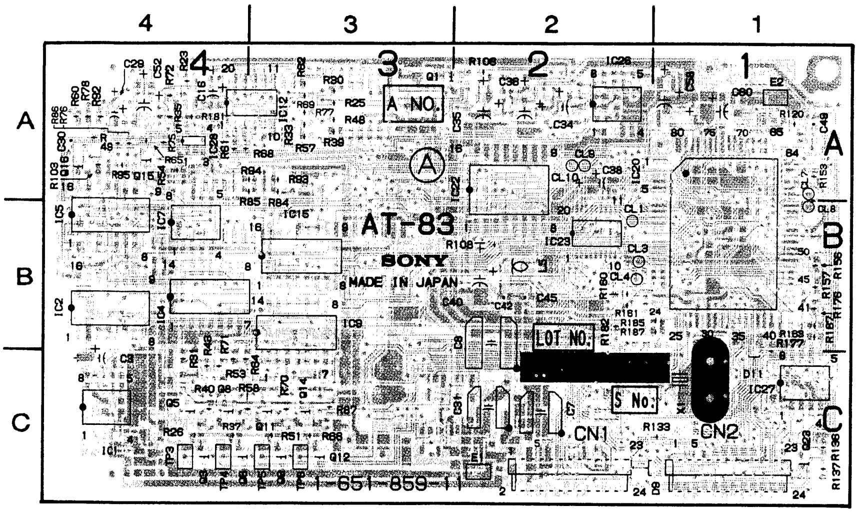


⑧ CN2-1 BLKG

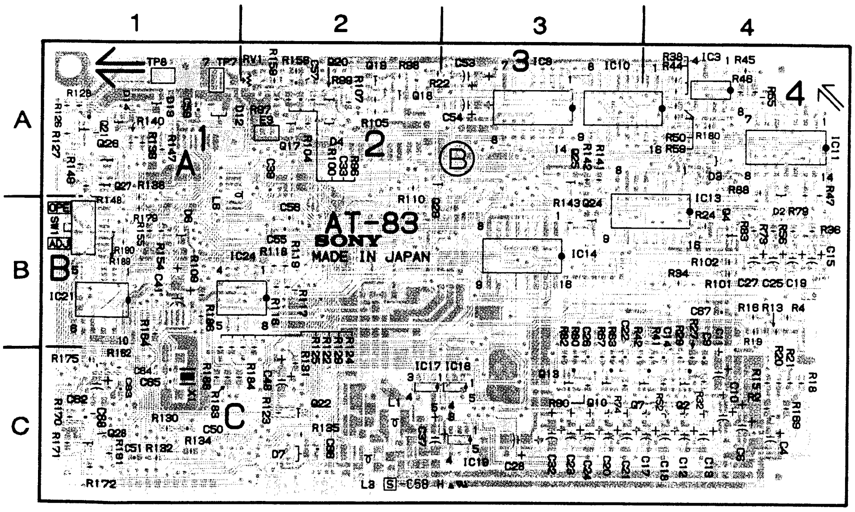


⑨ CN1-13 REF PULSE

AT-83 (SYSTEM CONTROL)


4
3
2
1
A
B
C
A NO.
AT-83
SONY
MADE IN JAPAN
LOT NO.
S No.
CN1
CN2
1-651-859-11

AT-83 —COMPONENT SIDE—
1-651-859-11


1
2
3
4
A
B
C
AT-83
SONY
MADE IN JAPAN

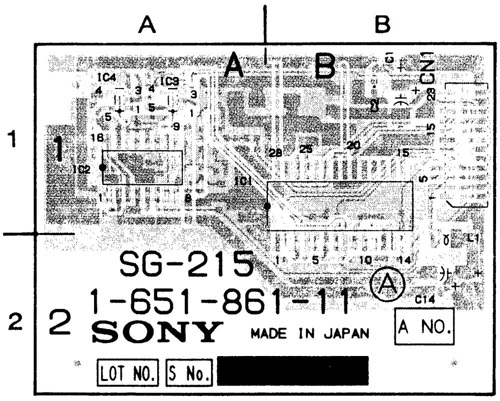
AT-83 —SOLDERING SIDE—
1-651-859-11

AT-83(1-651-859-11)

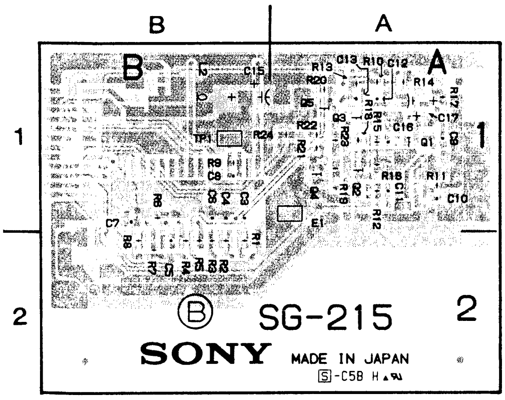
CN1	C-2	*Q22	C-2
CN2	C-1	Q23	C-1
		*Q24	B-3
*D2	A-4	*Q25	A-3
*D3	A-4	*Q26	A-1
*D4	A-2	*Q27	A-1
*D6	B-1	*Q28	C-1
*D7	C-2	*Q29	A-2
D11	C-1		
*D12	A-1	*RV1	A-2
*D13	A-1		
*D14	A-1	*SW1	B-1
IC1	C-4	TP3	C-4
IC2	B-4	TP4	C-4
*IC3	A-4	TP5	C-3
IC5	B-4	TP6	C-3
IC7	B-4	*TP7	A-1
*IC8	A-3		
IC9	B-3	*X1	C-1
*IC10	A-3		
*IC11	A-4		
IC12	A-3		
*IC13	B-4		
*IC14	B-3		
IC15	B-3		
*IC17	C-2		
*IC18	C-3		
*IC19	C-3		
IC20	B-1		
*IC21	B-1		
IC22	A-2		
IC23	B-2		
*IC24	B-2		
IC26	A-2		
IC27	C-1		
IC28	A-4		
Q1	A-3		
*Q2	C-4		
Q3	C-4		
*Q4	B-4		
Q5	C-4		
Q6	C-4		
*Q7	C-4		
Q8	C-4		
Q9	C-3		
*Q10	C-3		
Q11	C-3		
Q12	C-3		
*Q13	C-3		
Q14	C-3		
Q15	A-4		
Q16	A-4		
*Q17	A-2		
*Q18	A-2		
*Q19	A-2		
*Q20	A-2		
*Q21	A-1		

* : Soldering side

SG-215 (SYNC GENERATOR)


A
B
1
2
IC4
IC3
IC2
IC1
CN1
SG-215
1-651-861-11
SONY
MADE IN JAPAN
A NO.
LOT NO.
S No.
C14
L1

SG-215 —COMPONENT SIDE—
1-651-861-11

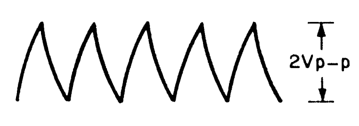

B
A
1
2
TP1
Q1
Q3
E1
SG-215
SONY
MADE IN JAPAN
S-C58

SG-215 —SOLDERING SIDE—
1-651-861-11

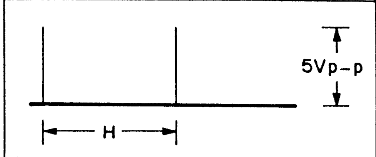
SG-215(1-651-861-11)

CN1	B-1
IC1	B-1
IC2	A-1
IC3	A-1
IC4	A-1
✱Q1	A-1
✱Q2	A-1
✱Q3	A-1
✱Q4	A-1
✱Q5	A-1
✱TP1	B-1

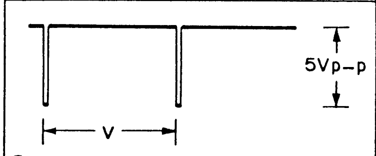
✱ : Soldering side



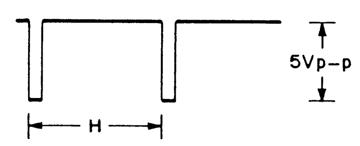
① TP1 14M



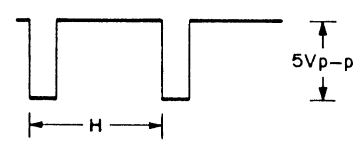
② CN1-16 CLP5



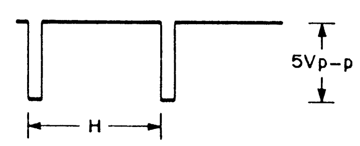
③ CN1-9 VD



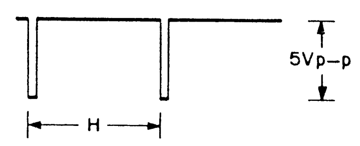
④ CN1-7 HD



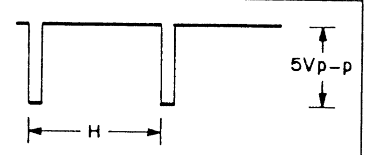
⑤ CN1-5 BLK



⑥ CN1-14 SYNC

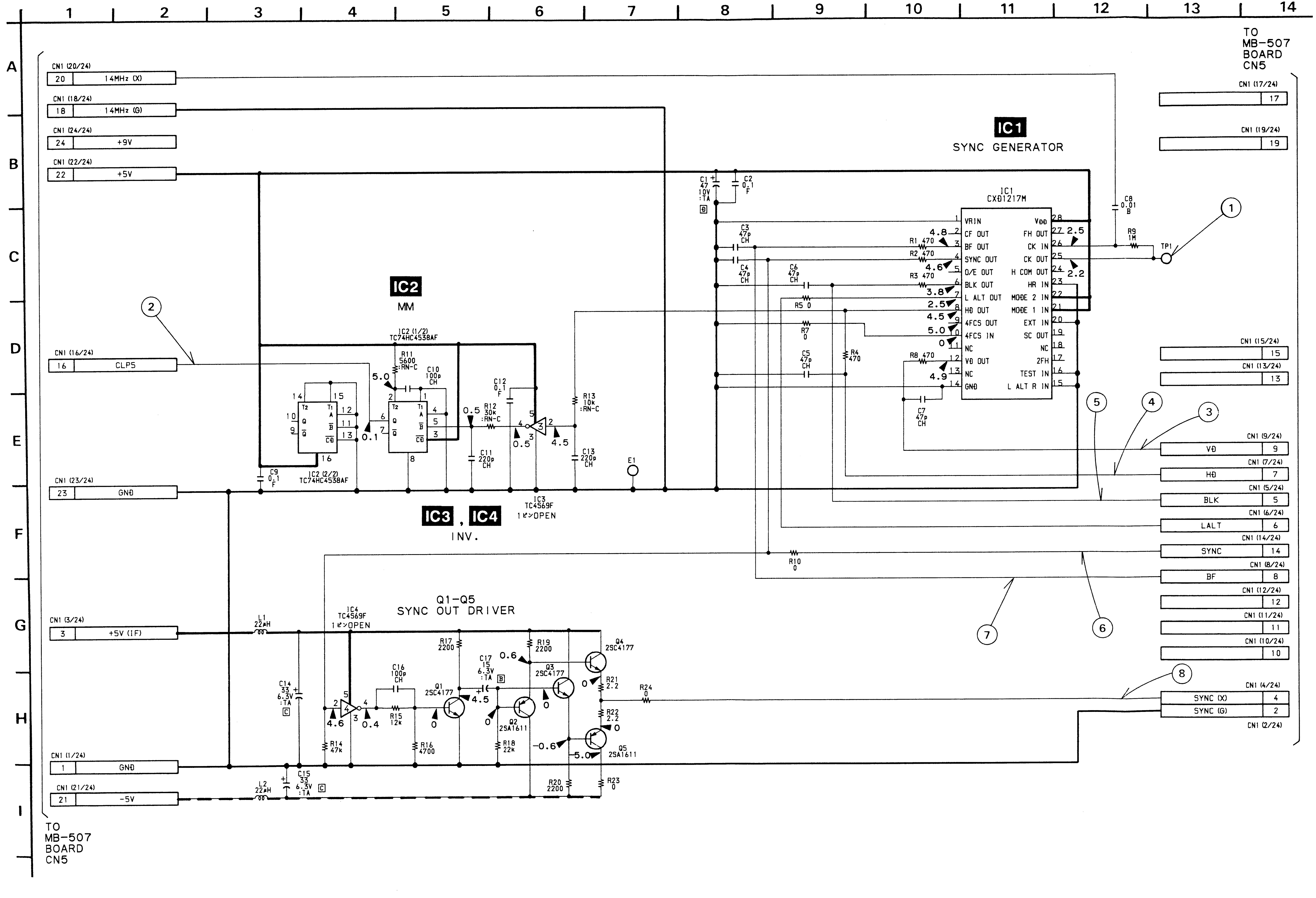


⑦ CN1-8 BF



⑧ CN1-4 SYNC

SG-215 (SYNC GENERATOR)

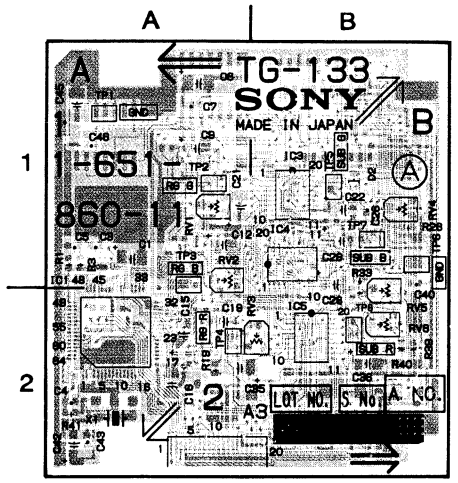

1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
CN1 (20/24) 20 14MHz (X)
CN1 (18/24) 18 14MHz (G)
CN1 (24/24) 24 +9V
CN1 (22/24) 22 +5V
CN1 (16/24) 16 CLPS
CN1 (23/24) 23 GND
CN1 (3/24) 3 +5V (IF)
CN1 (1/24) 1 GND
CN1 (21/24) 21 -5V
TO MB-507 BOARD CN5
IC1 SYNC GENERATOR
IC1 CXD1217M
VRIN
CF OUT
BF OUT
SYNC OUT
O/E OUT
BLK OUT
L ALT OUT
HD OUT
4FCS OUT
4FCS IN
NC
VD OUT
NC
GND
VDD
FH OUT
CK IN
CK OUT
H COM OUT
HR IN
MODE 2 IN
MODE 1 IN
EXT IN
SC OUT
NC
2FH
TEST IN
L ALT R IN
IC2 MM
IC2 (1/2) TC74HC4538AF
IC2 (2/2) TC74HC4538AF
IC3, IC4 INV.
IC3 TC4S69F 1ピンOPEN
IC4 TC4S69F 1ピンOPEN
Q1-Q5 SYNC OUT DRIVER
Q1 2SC4177
Q2 2SA1611
Q3 2SC4177
Q4 2SC4177
Q5 2SA1611
TP1
E1
CN1 (17/24) 17
CN1 (19/24) 19
CN1 (15/24) 15
CN1 (13/24) 13
CN1 (9/24) VD 9
CN1 (7/24) HD 7
CN1 (5/24) BLK 5
CN1 (6/24) LALT 6
CN1 (14/24) SYNC 14
CN1 (8/24) BF 8
CN1 (12/24) 12
CN1 (11/24) 11
CN1 (10/24) 10
CN1 (4/24) SYNC (X) 4
SYNC (G) 2 CN1 (2/24)
①
②
③
④
⑤
⑥
⑦
⑧

TG-133 (TIMING GENERATOR)

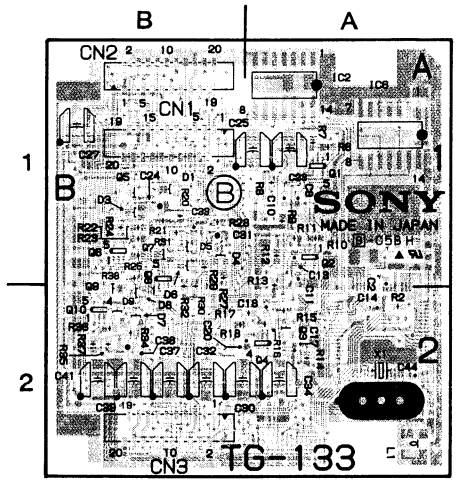
TG-133(1-651-860-11)

✱CN1	B-1
✱CN2	B-1
✱CN3	B-2
✱D1	B-1
D2	B-1
✱D3	B-1
✱D4	B-1
✱D5	B-1
✱D6	B-1
✱D7	B-2
✱D8	B-2
✱D9	B-2
IC1	A-2
✱IC2	A-1
IC3	B-1
IC4	B-1
IC5	B-2
✱IC6	A-1
✱Q1	A-1
✱Q2	A-1
✱Q3	A-2
✱Q4	A-2
✱Q5	B-1
✱Q6	B-1
✱Q7	B-1
✱Q8	B-1
✱Q9	B-1
✱Q10	B-2
RV1	A-1
RV2	A-1
RV3	B-2
RV4	B-1
RV5	B-2
RV6	B-2
TP1	A-1
TP2	A-1
TP3	A-1
TP4	A-2
TP5	B-1
TP6	B-1
TP7	B-1
TP8	B-2
✱X1	A-2

✱ : Soldering side

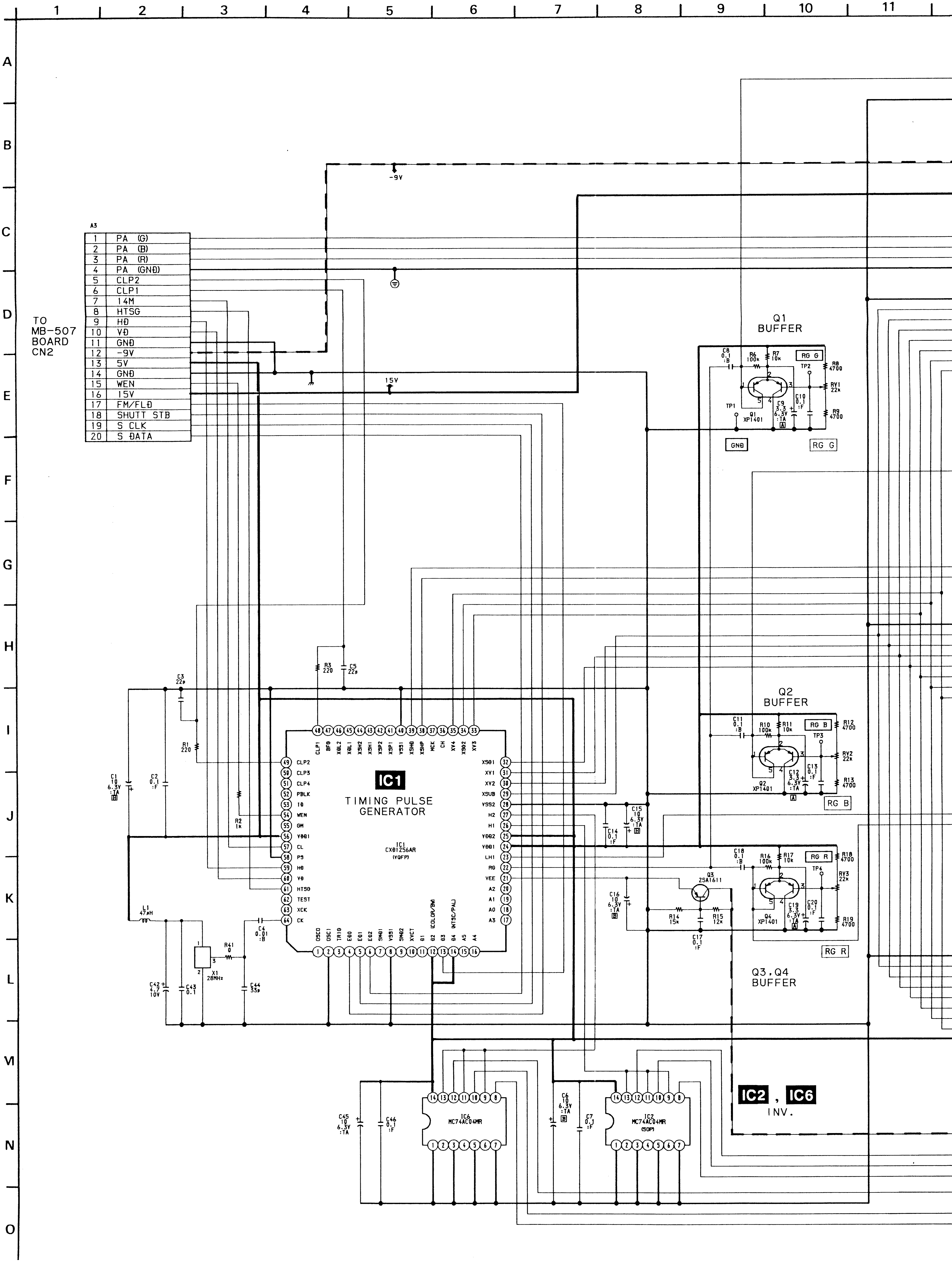

A
B
1
2
TG-133
SONY
MADE IN JAPAN
1-651-860-11
LOT NO.
S No.

TG-133 –COMPONENT SIDE–
1-651-860-11


B
A
1
2
CN1
CN2
CN3
SONY
MADE IN JAPAN
TG-133

TG-133 –SOLDERING SIDE–
1-651-860-11

TG-133 (TIMING GENERATOR)



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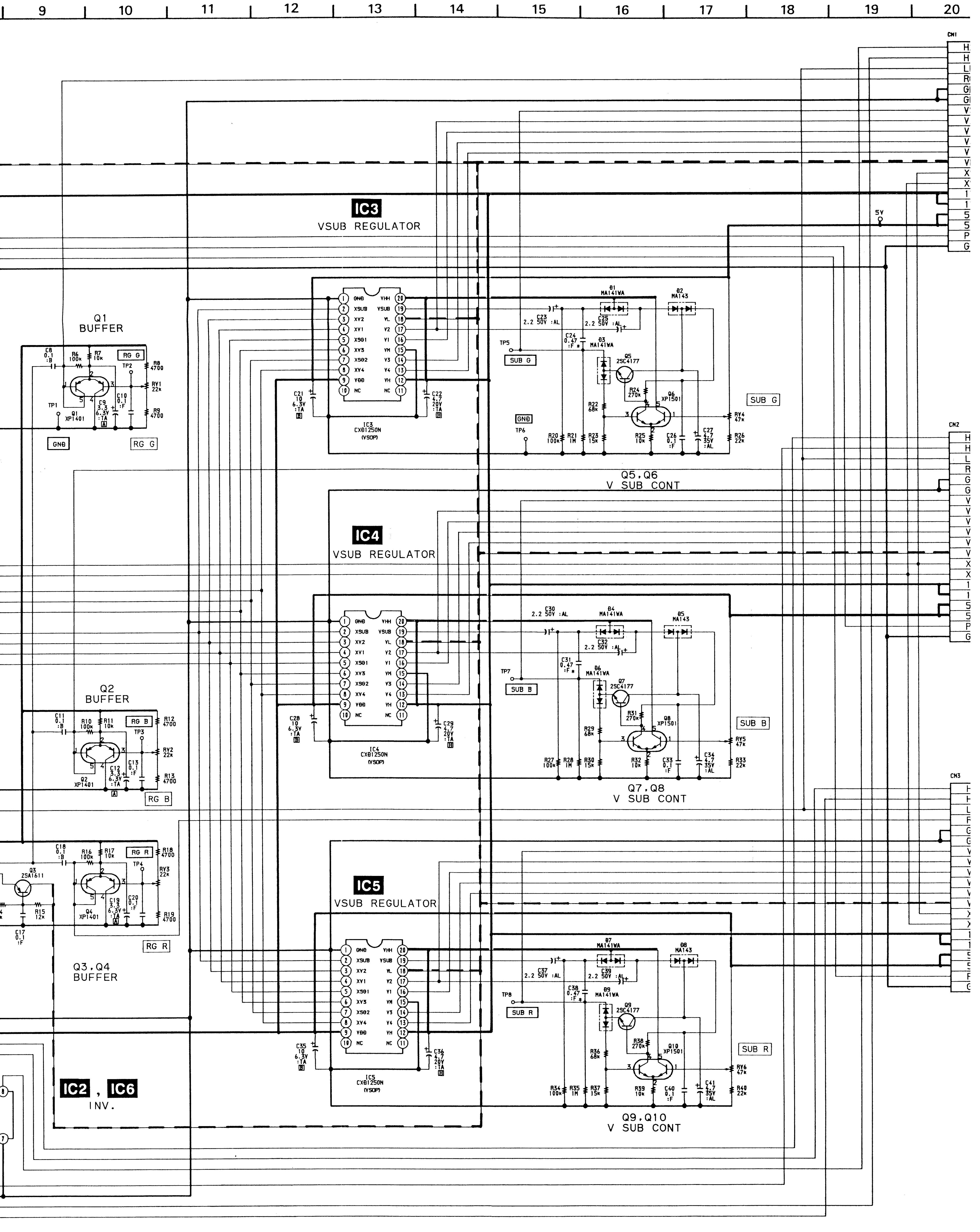
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
A3
1 PA (G)
2 PA (B)
3 PA (R)
4 PA (GND)
5 CLP2
6 CLP1
7 14M
8 HTSG
9 HD
10 VD
11 GND
12 -9V
13 5V
14 GND
15 WEN
16 15V
17 FM/FLD
18 SHUTT STB
19 S CLK
20 S DATA
TO MB-507 BOARD CN2
-9V
15V
Q1 BUFFER
Q2 BUFFER
Q3, Q4 BUFFER
RG G
RG B
RG R
GND
TP1
TP2
TP3
TP4
Q1 XP1401
Q2 XP1401
Q3 2SA1611
Q4 XP1401
C8 0.1 :B
R6 100k
R7 10k
R8 4700
RV1 22k
C9 3.3 6.3V :TA
C10 0.1 :F
R9 4700
C11 0.1 :B
R10 100k
R11 10k
R12 4700
RV2 22k
C12 3.3 6.3V :TA
C13 0.1 :F
R13 4700
C18 0.1 :B
R16 100k
R17 10k
R18 4700
RV3 22k
C19 3.3 6.3V :TA
C20 0.1 :F
R19 4700
R14 15k
R15 12k
C17 0.1 :F
C16 10 6.3V :TA
C14 0.1 :F
C15 10 6.3V :TA
IC1
TIMING PULSE GENERATOR
IC1 CX81256AR (VQFP)
CLP1
BF0
XBL2
XBL1
XSH2
XSH1
XSP2
XSP1
VSS1
XSHD
XSHP
MCK
CH
XV4
XSG2
XV3
CLP2
CLP3
CLP4
PBLK
ID
WEN
GM
VDD1
CL
PS
HD
VD
HTSG
TEST
XCK
CK
XSG1
XV1
XV2
XSUB
VSS2
H2
H1
VDD2
VDD1
LH1
RG
VEE
A2
A1
A0
A3
OSCO
OSCI
TRIG
EO0
EO1
EO2
SMD1
VSS1
SMD2
XVCT
O1
O2
O3
O4
A5
A4
(COLOR/BW)
(NTSC/PAL)
R3 220
C5 22p
C3 22p
R1 220
R2 1k
C1 10 6.3V :TA
C2 0.1 :F
L1 47μH
C4 0.01 :B
R41 0
X1 28MHz
C42 4.7 10V
C43 0.1
C44 33p
C45 10 6.3V :TA
C46 0.1 :F
IC6 MC74AC04MR
C6 10 6.3V :TA
C7 0.1 :F
IC2 MC74AC04MR (SOP)
IC2, IC6 INV.



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19
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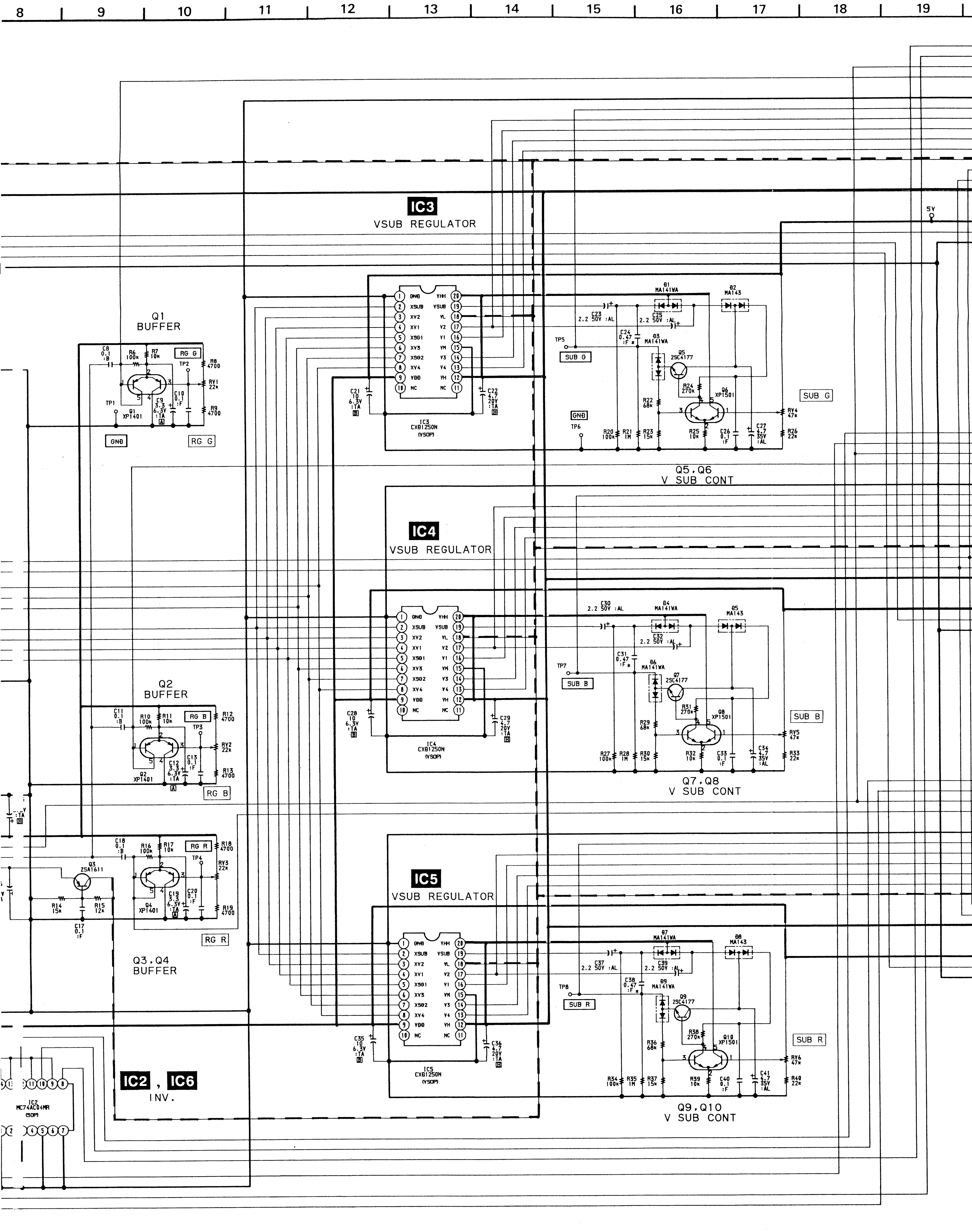
IC3
VSUB REGULATOR
IC4
VSUB REGULATOR
IC5
VSUB REGULATOR
IC2 , IC6
INV.
Q1
BUFFER
Q2
BUFFER
Q3.Q4
BUFFER
Q5.Q6
V SUB CONT
Q7.Q8
V SUB CONT
Q9.Q10
V SUB CONT
IC3
CXD1250N
(VSOP)
IC4
CXD1250N
(VSOP)
IC5
CXD1250N
(VSOP)
GND
XSUB
XV2
XV1
XSG1
XV3
XSG2
XV4
VDD
NC
VHH
VSUB
VL
V2
V1
VM
V3
V4
VH
NC
RG G
RG B
RG R
SUB G
SUB B
SUB R
GND
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
5V
CN1
CN2
CN3
Q1 XP1401
Q2 XP1401
Q3 2SA1611
Q4 XP1401
Q5 2SC4177
Q6 XP1501
Q7 2SC4177
Q8 XP1501
Q9 2SC4177
Q10 XP1501
D1 MA141WA
D2 MA143
D3 MA141WA
D4 MA141WA
D5 MA143
D6 MA141WA
D7 MA141WA
D8 MA143
D9 MA141WA
RV1 22k
RV2 22k
RV3 22k
RV4 47k
RV5 47k
RV6 47k


8
9
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14
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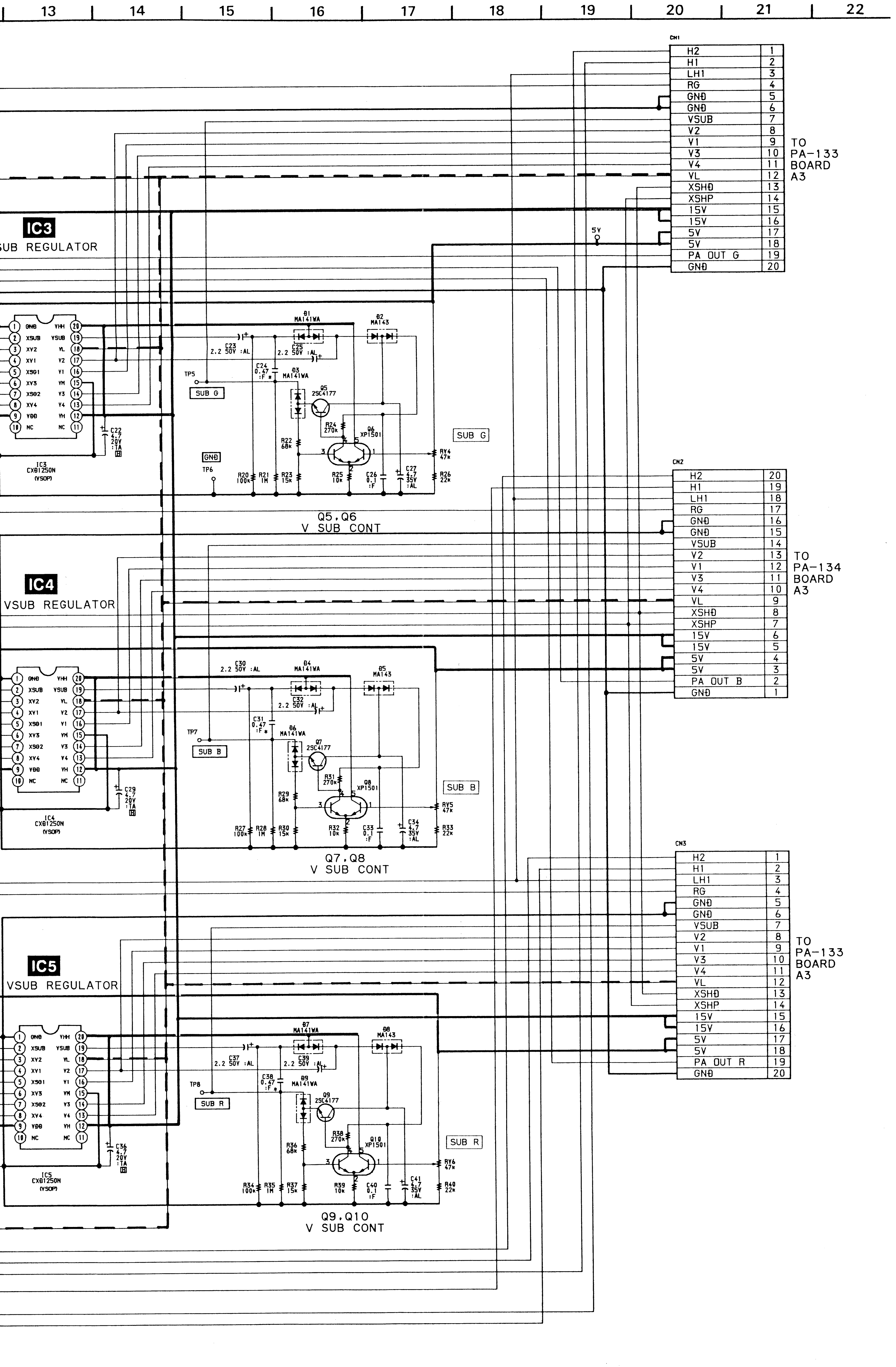
18
19
IC3
VSUB REGULATOR
IC3
CX81250N
(VSOP)
Q1
BUFFER
Q1
XP1401
RG G
TP1
TP2
GND
RG G
Q5,Q6
V SUB CONT
SUB G
TP5
TP6
GND
5V
IC4
VSUB REGULATOR
IC4
CX81250N
(VSOP)
Q2
BUFFER
Q2
XP1401
RG B
TP3
Q7,Q8
V SUB CONT
SUB B
TP7
Q3
2SA1611
Q3,Q4
BUFFER
Q4
XP1401
RG R
TP4
IC5
VSUB REGULATOR
IC5
CX81250N
(VSOP)
Q9,Q10
V SUB CONT
SUB R
TP8
IC2, IC6
INV.
IC2
MC74AC04MR
(SOP)
GND
XSUB
XV2
XV1
XSG1
XV3
XSG2
XV4
VDD
NC
VHH
VSUB
VL
V2
V1
VM
V3
V4
VH
NC
D1 MA141WA
D2 MA143
D3 MA141WA
Q5 2SC4177
Q6 XP1501
D4 MA141WA
D5 MA143
D6 MA141WA
Q7 2SC4177
Q8 XP1501
D7 MA141WA
D8 MA143
D9 MA141WA
Q9 2SC4177
Q10 XP1501
RV1 22k
RV2 22k
RV3 22k
RV4 47k
RV5 47k
RV6 47k


13
14
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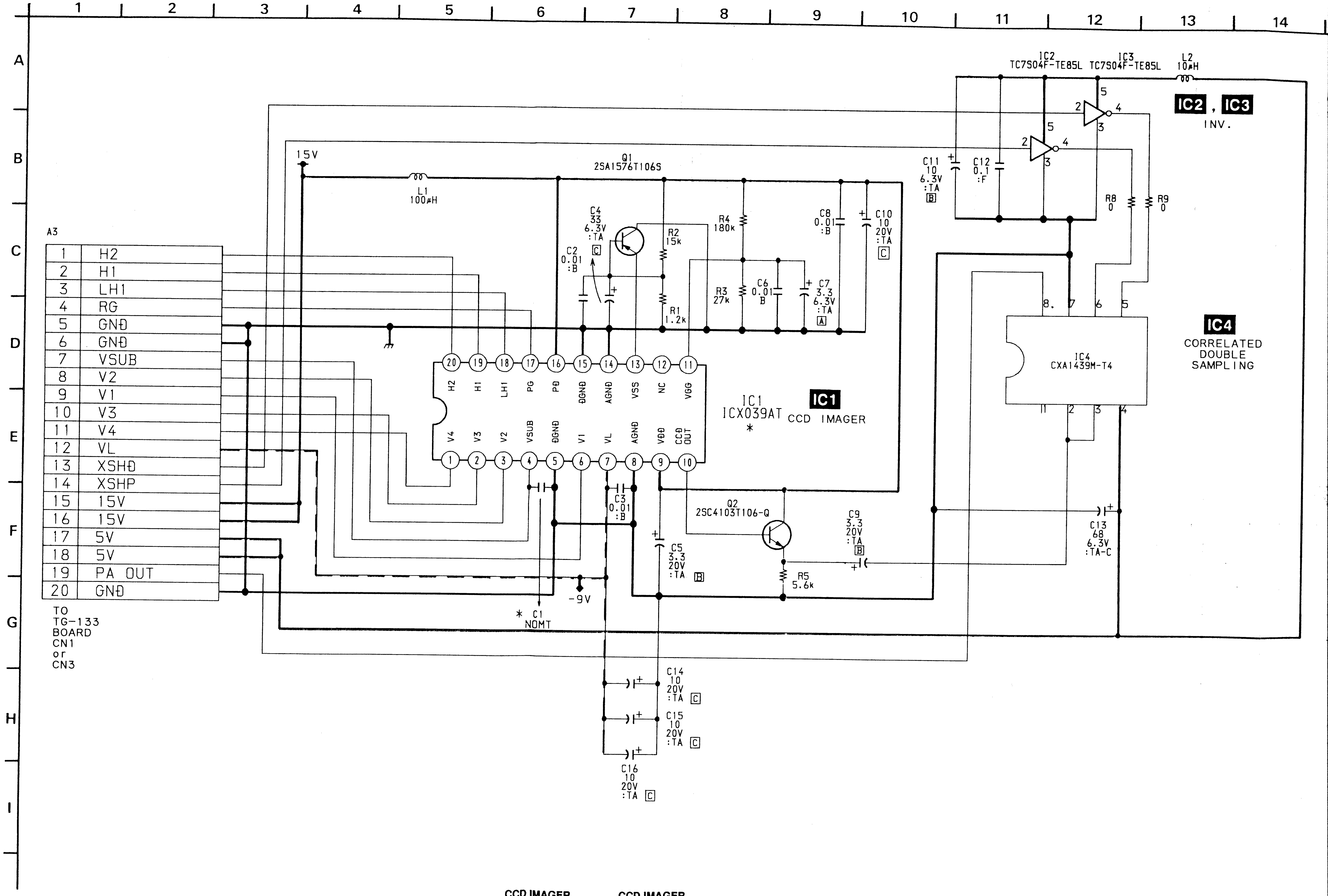
18
19
20
21
22
CN1
H2 1
H1 2
LH1 3
RG 4
GND 5
GND 6
VSUB 7
V2 8
V1 9
V3 10
V4 11
VL 12
XSHD 13
XSHP 14
15V 15
15V 16
5V 17
5V 18
PA OUT G 19
GND 20
TO PA-133 BOARD A3
5V
IC3
UB REGULATOR
GND VHH
XSUB VSUB
XV2 VL
XV1 V2
XSG1 V1
XV3 VH
XSG2 V3
XV4 V4
VDD VH
NC NC
IC3 CXB1250N (VSOP)
C22 4.7 20V :TA
D1 MA141WA
D2 MA143
C23 2.2 50V :AL
C25 2.2 50V :AL
C24 0.47 :F
D3 MA141WA
TP5
SUB G
Q5 2SC4177
R24 270k
Q6 XP1501
R22 68k
GND
TP6
R20 100k
R21 1M
R23 15k
R25 10k
C26 0.1 :F
C27 4.7 35V :AL
RV4 47k
R26 22k
SUB G
Q5,Q6 V SUB CONT
CN2
H2 20
H1 19
LH1 18
RG 17
GND 16
GND 15
VSUB 14
V2 13
V1 12
V3 11
V4 10
VL 9
XSHD 8
XSHP 7
15V 6
15V 5
5V 4
5V 3
PA OUT B 2
GND 1
TO PA-134 BOARD A3
IC4
VSUB REGULATOR
IC4 CXB1250N (VSOP)
C29 4.7 20V :TA
C30 2.2 50V :AL
D4 MA141WA
D5 MA143
C32 2.2 50V :AL
C31 0.47 :F
D6 MA141WA
TP7
SUB B
Q7 2SC4177
R31 270k
Q8 XP1501
R29 68k
R27 100k
R28 1M
R30 15k
R32 10k
C33 0.1 :F
C34 4.7 35V :AL
RV5 47k
R33 22k
SUB B
Q7,Q8 V SUB CONT
CN3
H2 1
H1 2
LH1 3
RG 4
GND 5
GND 6
VSUB 7
V2 8
V1 9
V3 10
V4 11
VL 12
XSHD 13
XSHP 14
15V 15
15V 16
5V 17
5V 18
PA OUT R 19
GND 20
TO PA-133 BOARD A3
IC5
VSUB REGULATOR
IC5 CXB1250N (VSOP)
C36 4.7 20V :TA
D7 MA141WA
D8 MA143
C37 2.2 50V :AL
C39 2.2 50V :AL
C38 0.47 :F
D9 MA141WA
TP8
SUB R
Q9 2SC4177
R38 270k
Q10 XP1501
R36 68k
R34 100k
R35 1M
R37 15k
R39 10k
C40 0.1 :F
C41 4.7 35V :AL
RV6 47k
R40 22k
SUB R
Q9,Q10 V SUB CONT

PA-133, PA-134 (CCD PROCESS)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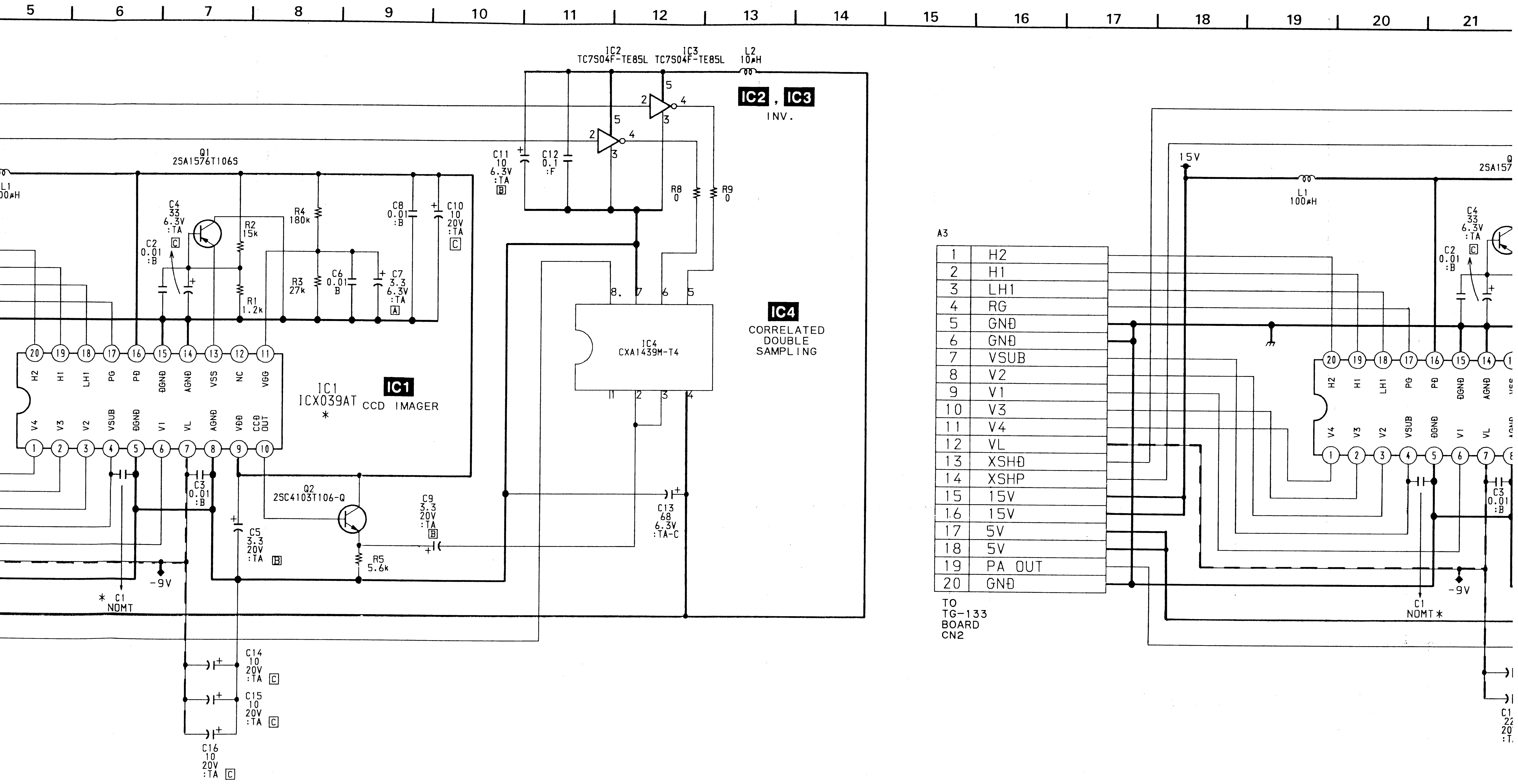
A
B
C
D
E
F
G
H
I
A3
1 H2
2 H1
3 LH1
4 RG
5 GNĐ
6 GNĐ
7 VSUB
8 V2
9 V1
10 V3
11 V4
12 VL
13 XSHĐ
14 XSHP
15 15V
16 15V
17 5V
18 5V
19 PA OUT
20 GNĐ
TO TG-133 BOARD CN1 or CN3
15V
L1 100μH
Q1 2SA1576T106S
C4 33 6.3V :TA C
C2 0.01 :B
R2 15k
R1 1.2k
R4 180k
R3 27k
C6 0.01 B
C7 3.3 6.3V :TA A
C8 0.01 :B
C10 10 20V :TA C
H2 H1 LH1 PG PĐ ĐGNĐ AGNĐ VSS NC VGG
V4 V3 V2 VSUB ĐGNĐ V1 VL AGNĐ VĐĐ CCĐ OUT
IC1 ICX039AT *
IC1 CCD IMAGER
C3 0.01 :B
* C1 NOMT
-9V
Q2 2SC4103T106-Q
C5 3.3 20V :TA B
R5 5.6k
C9 3.3 20V :TA B
C14 10 20V :TA C
C15 10 20V :TA C
C16 10 20V :TA C
IC2 TC7S04F-TE85L
IC3 TC7S04F-TE85L
L2 10μH
IC2, IC3 INV.
C11 10 6.3V :TA B
C12 0.1 :F
R8 0
R9 0
IC4 CXA1439M-T4
IC4 CORRELATED DOUBLE SAMPLING
C13 68 6.3V :TA-C


5
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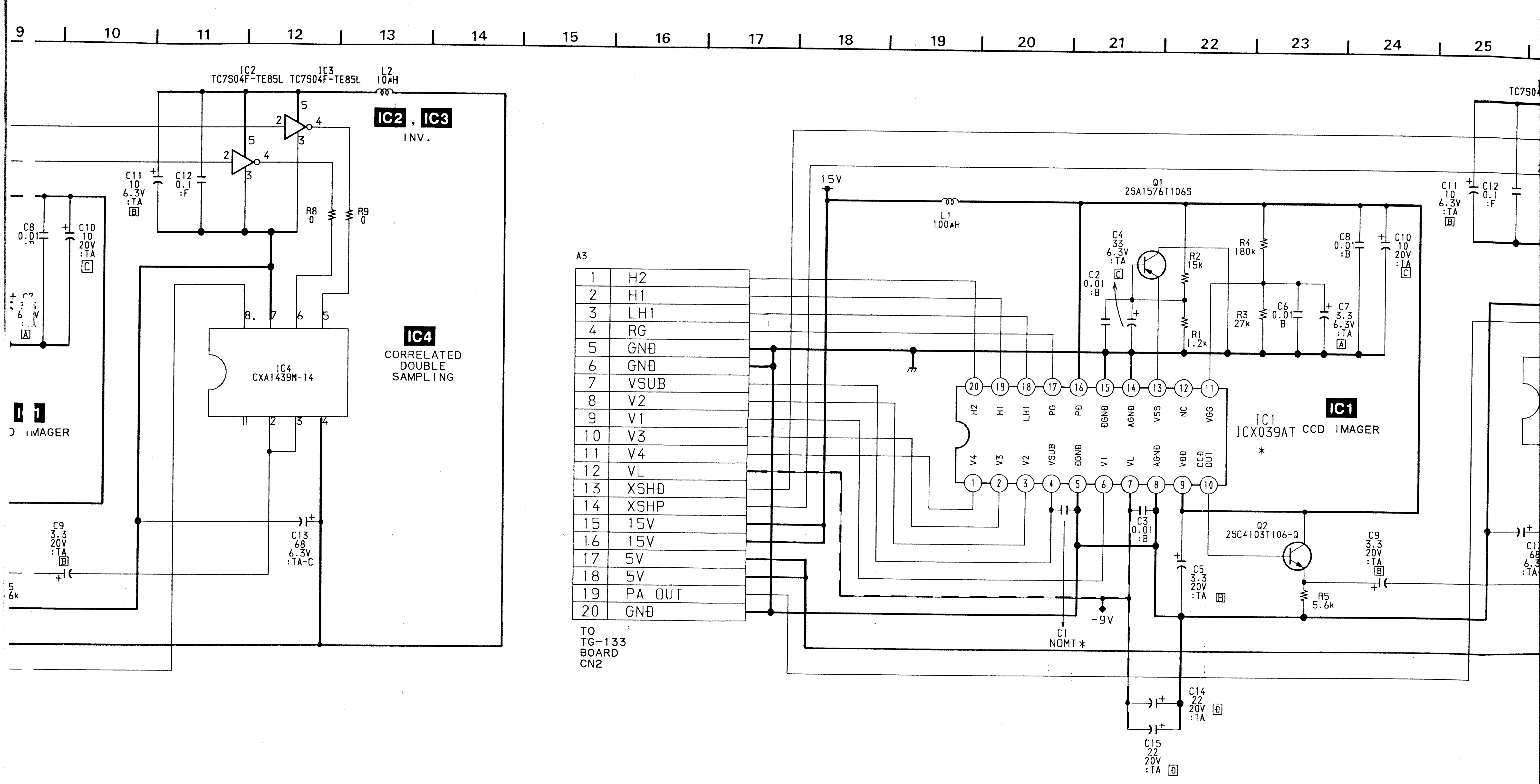
10
11
12
13
14
15
16
17
18
19
20
21
IC2
TC7S04F-TE85L
IC3
TC7S04F-TE85L
L2
10μH
IC2 , IC3
INV.
C11
10
6.3V
:TA
B
C12
0.1
:F
R8
0
R9
0
Q1
2SA1576T106S
L1
100μH
C4
33
6.3V
:TA
C
C2
0.01
:B
R2
15k
R1
1.2k
R4
180k
R3
27k
C6
0.01
B
C7
3.3
6.3V
:TA
A
C8
0.01
:B
C10
10
20V
:TA
C
IC4
CXA1439M-T4
IC4
CORRELATED
DOUBLE
SAMPLING
H2
H1
LH1
PG
PD
DGND
AGND
VSS
NC
VGG
V4
V3
V2
VSUB
DGND
V1
VL
AGND
VDD
CCD OUT
IC1
ICX039AT
*
IC1
CCD IMAGER
C3
0.01
:B
Q2
2SC4103T106-Q
C9
3.3
20V
:TA
B
C13
68
6.3V
:TA-C
C5
3.3
20V
:TA
B
R5
5.6k
-9V
* C1
NOMT
C14
10
20V
:TA
C
C15
10
20V
:TA
C
C16
10
20V
:TA
C
15V
L1
100μH
Q
2SA157
C4
33
6.3V
:TA
C
C2
0.01
:B
C3
0.01
:B
-9V
C1
NOMT *
C1
22
20
:T
A3
TO
TG-133
BOARD
CN2

1	H2
2	H1
3	LH1
4	RG
5	GND
6	GND
7	VSUB
8	V2
9	V1
10	V3
11	V4
12	VL
13	XSHD
14	XSHP
15	15V
16	15V
17	5V
18	5V
19	PA OUT
20	GND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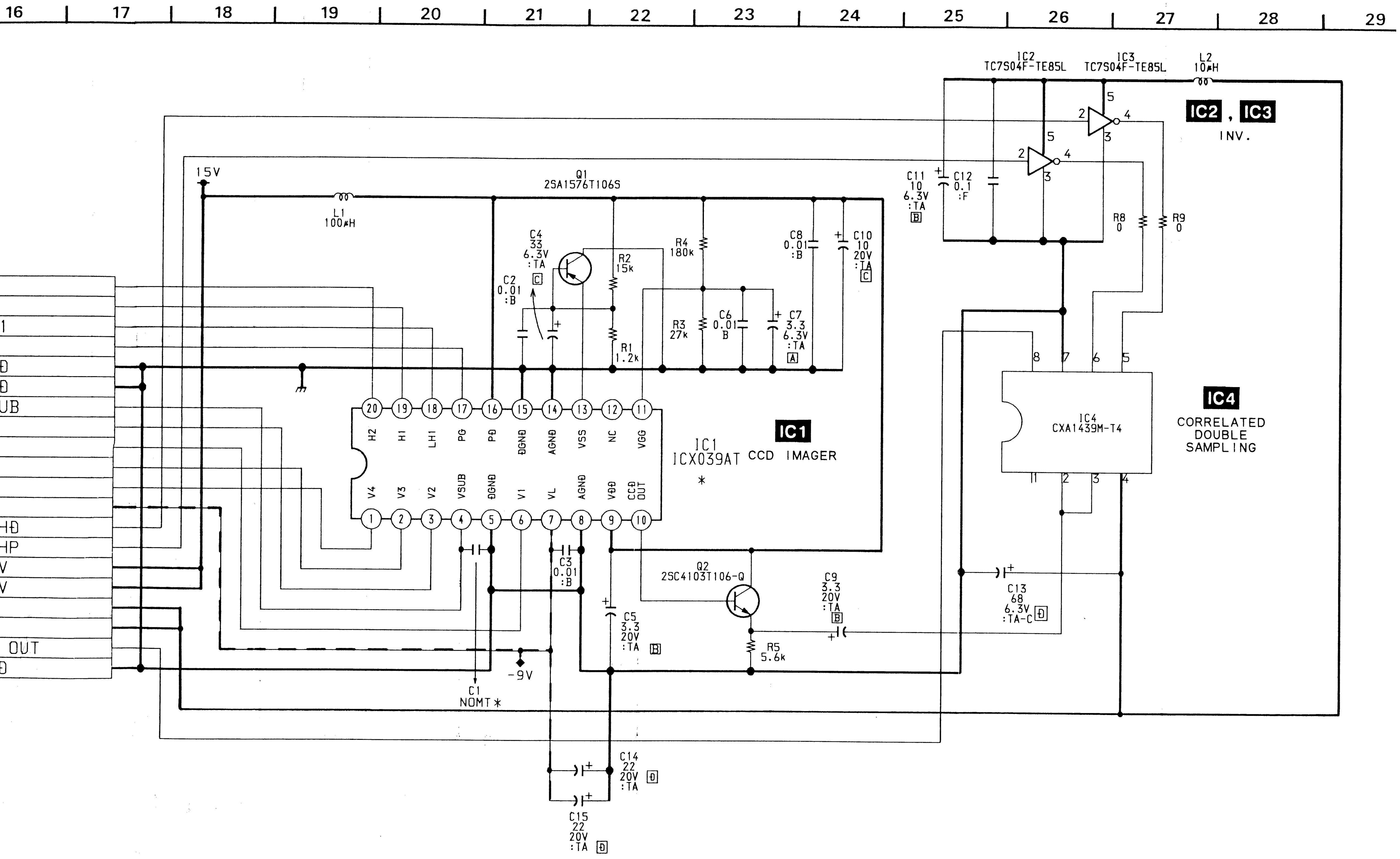
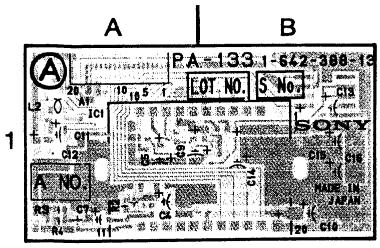
22
23
24
25
IC2 TC7S04F-TE85L
IC3 TC7S04F-TE85L
L2 10μH
IC2 , IC3 INV.
C11 10 6.3V :TA B
C12 0.1 :F
R8 0
R9 0
C8 0.01 :B
C10 10 20V :TA C
IC4 CXA1439M-T4
IC4 CORRELATED DOUBLE SAMPLING
C9 3.3 20V :TA B
C13 68 6.3V :TA-C
IMAGER
A3
1 H2
2 H1
3 LH1
4 RG
5 GND
6 GND
7 VSUB
8 V2
9 V1
10 V3
11 V4
12 VL
13 XSHD
14 XSHP
15 15V
16 15V
17 5V
18 5V
19 PA OUT
20 GND
TO TG-133 BOARD CN2
15V
L1 100μH
Q1 2SA1576T106S
C4 33 6.3V :TA C
C2 0.01 :B
R2 15k
R1 1.2k
R4 180k
R3 27k
C6 0.01 B
C7 3.3 6.3V :TA A
C8 0.01 :B
C10 10 20V :TA C
H2 H1 LH1 PG PD DGND AGND VSS NC VGG
V4 V3 V2 VSUB DGND V1 VL AGND VDD CCD OUT
IC1 ICX039AT *
IC1 CCD IMAGER
C1 NOMT *
C3 0.01 :B
-9V
C5 3.3 20V :TA B
Q2 2SC4103T106-Q
R5 5.6k
C9 3.3 20V :TA B
C14 22 20V :TA D
C15 22 20V :TA D
C11 10 6.3V :TA B
C12 0.1 :F
TC7S0

 16
17
18
19
20
21
22
23
24
25
26
27
28
29
IC2
TC7S04F-TE85L
IC3
TC7S04F-TE85L
L2
10μH
IC2, IC3
INV.
15V
Q1
2SA1576T106S
L1
100μH
C4
33
6.3V
:TA
C
C2
0.01
:B
R2
15k
R1
1.2k
R4
180k
R3
27k
C6
0.01
B
C7
3.3
6.3V
:TA
A
C8
0.01
:B
C10
10
20V
:TA
C
C11
10
6.3V
:TA
B
C12
0.1
:F
R8
0
R9
0
1
Đ
Đ
UB
HĐ
HP
V
V
OUT
Đ
H2
H1
LH1
PG
PĐ
ĐGNĐ
AGNĐ
VSS
NC
VGG
V4
V3
V2
VSUB
ĐGNĐ
V1
VL
AGNĐ
VĐĐ
CCĐ OUT
IC1
ICX039AT
CCD IMAGER
*
IC1
IC4
CXA1439M-T4
IC4
CORRELATED
DOUBLE
SAMPLING
C3
0.01
:B
Q2
2SC4103T106-Q
C9
3.3
20V
:TA
B
C13
68
6.3V
:TA-C
Đ
C5
3.3
20V
:TA
B
R5
5.6k
-9V
C1
NOMT*
C14
22
20V
:TA
Đ
C15
22
20V
:TA
Đ

PA-133 (CCD PROCESS) PA-134 (CCD PROCESS)

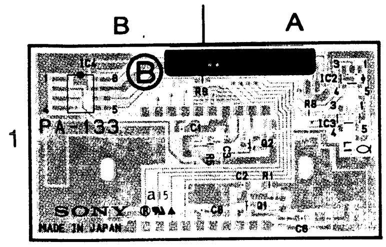


PA-133 —COMPONENT SIDE—
1-642-388-13

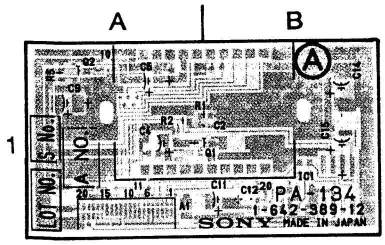
PA-133(1-642-388-13)

✱IC2	A-1
✱IC3	A-1
✱IC4	B-1
✱Q1	A-1
✱Q2	A-1

✱ : Soldering side



PA-133 —SOLDERING SIDE—
1-642-388-13

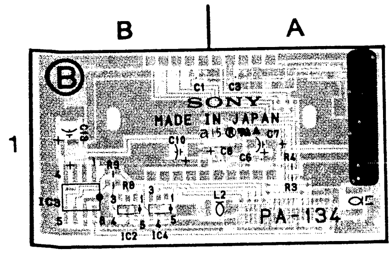


PA-134 —COMPONENT SIDE—
1-642-389-12

PA-134(1-642-389-12)

✱IC2	B-1
✱IC3	B-1
✱IC4	B-1
Q1	B-1
Q2	A-1

✱ : Soldering side



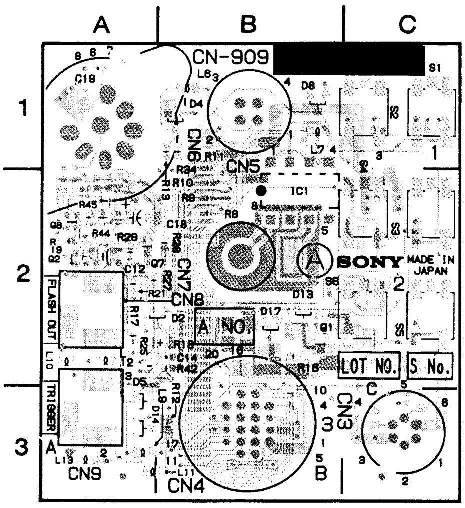
PA-134 —SOLDERING SIDE—
1-642-389-12

CN-909 (CONNECTOR)

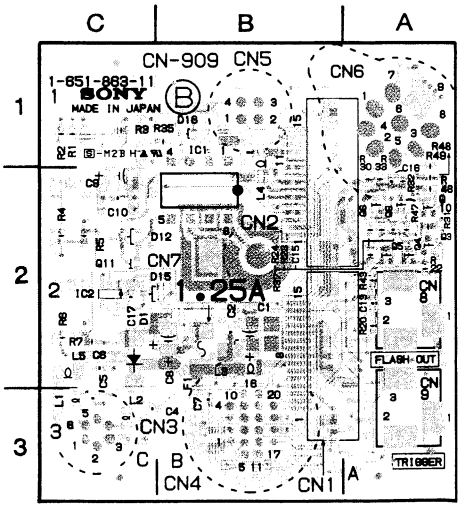
CN-909(1-651-863-11)

✱CN1	B-2
✱CN2	B-2
✱D1	C-2
D2	B-2
D4	B-1
D5	A-3
D8	B-1
✱F1	B-2
✱IC1	B-2
Q1	B-2
Q2	A-2
✱Q3	A-2
✱Q4	A-2
✱Q5	A-2
✱Q6	A-2
Q7	A-2
Q8	A-2
✱Q9	A-2
✱Q10	A-2
✱Q11	C-2
S1	C-1
S2	C-1
S3	C-2
S4	C-2
S5	C-2
S6	C-2

✱ : Soldering side

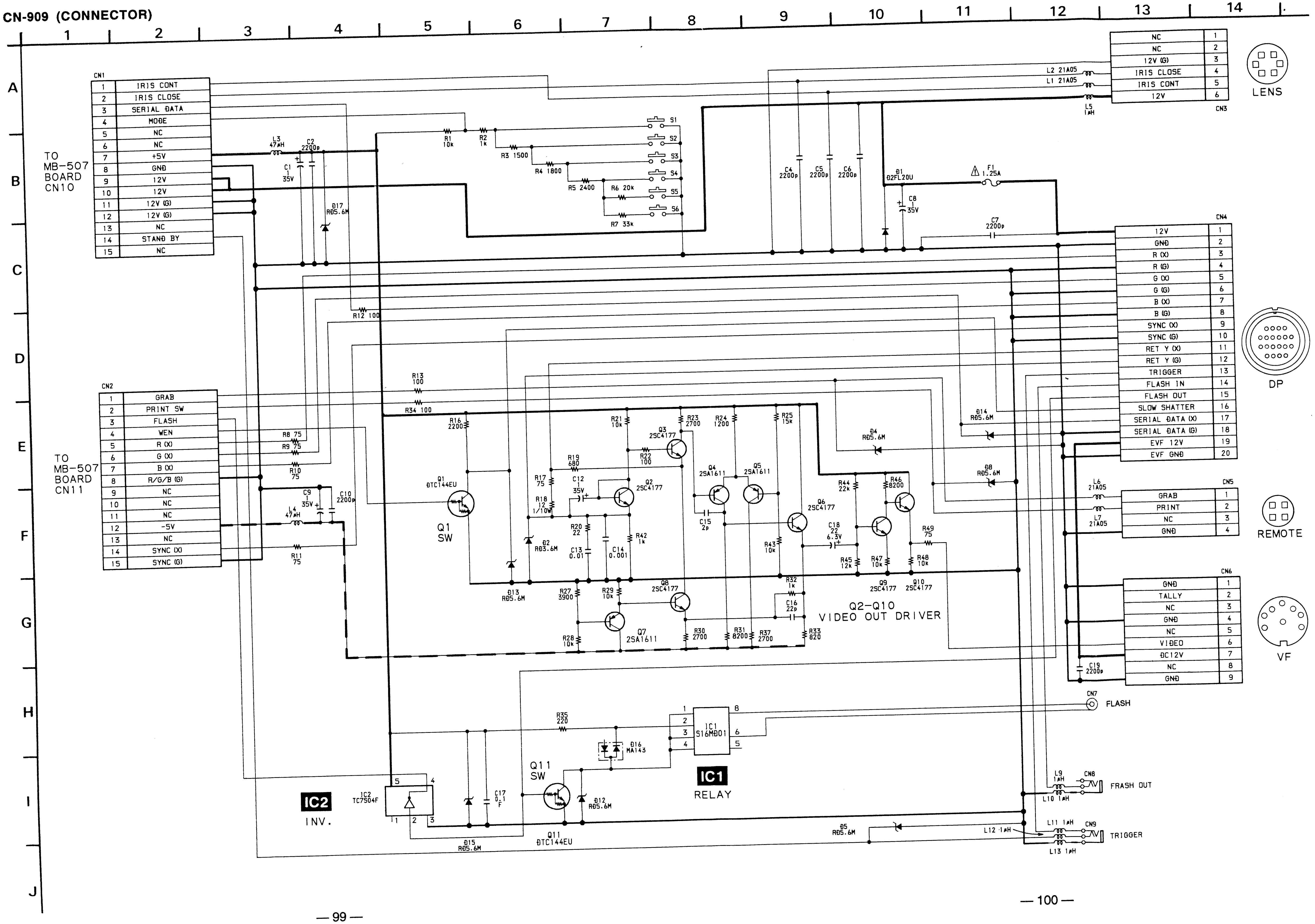

A
B
C
1
2
3
CN-909 [redacted]
S1
CN5
CN6
IC1
SONY MADE IN JAPAN
CN7
CN8
A NO.
LOT NO.
S No.
FLASH OUT
TRIGGER
CN3
CN9
CN4

CN-909 –COMPONENT SIDE–
1-651-863-11


C
B
A
1
2
3
CN-909 CN5
1-651-863-11
SONY
MADE IN JAPAN
CN6
IC1
CN2
CN7
1.25A
IC2
FLASH OUT
TRIGGER
CN3
CN4
CN1

CN-909 –SOLDERING SIDE–
1-651-863-11

CN-909 (CONNECTOR)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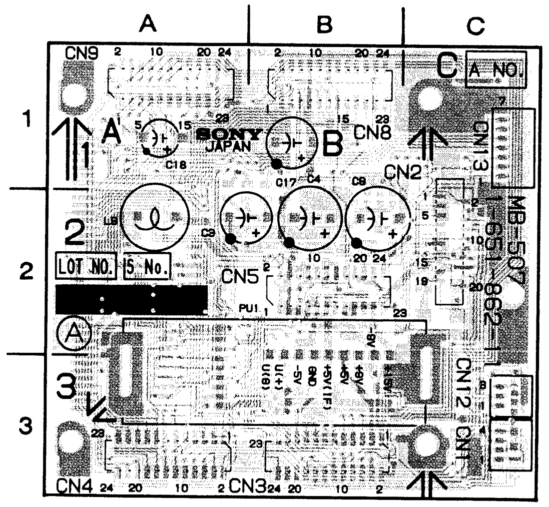
14
A
B
C
D
E
F
G
H
I
J
CN1
1 IRIS CONT
2 IRIS CLOSE
3 SERIAL DATA
4 MODE
5 NC
6 NC
7 +5V
8 GND
9 12V
10 12V
11 12V (G)
12 12V (G)
13 NC
14 STAND BY
15 NC
TO MB-507 BOARD CN10
CN2
1 GRAB
2 PRINT SW
3 FLASH
4 WEN
5 R (X)
6 G (X)
7 B (X)
8 R/G/B (G)
9 NC
10 NC
11 NC
12 -5V
13 NC
14 SYNC (X)
15 SYNC (G)
TO MB-507 BOARD CN11
CN3
1 NC
2 NC
3 12V (G)
4 IRIS CLOSE
5 IRIS CONT
6 12V
LENS
CN4
1 12V
2 GND
3 R (X)
4 R (G)
5 G (X)
6 G (G)
7 B (X)
8 B (G)
9 SYNC (X)
10 SYNC (G)
11 RET Y (X)
12 RET Y (G)
13 TRIGGER
14 FLASH IN
15 FLASH OUT
16 SLOW SHATTER
17 SERIAL DATA (X)
18 SERIAL DATA (G)
19 EVF 12V
20 EVF GND
DP
CN5
1 GRAB
2 PRINT
3 NC
4 GND
REMOTE
CN6
1 GND
2 TALLY
3 NC
4 GND
5 NC
6 VIDEO
7 DC12V
8 NC
9 GND
VF
CN7 FLASH
CN8 FRASH OUT
CN9 TRIGGER
L1 21A05
L2 21A05
L3 47μH
L4 47μH
L5 1μH
L6 21A05
L7 21A05
L9 1μH
L10 1μH
L11 1μH
L12 1μH
L13 1μH
C1 1 35V
C2 2200p
C4 2200p
C5 2200p
C6 2200p
C7 2200p
C8 1 35V
C9 1 35V
C10 2200p
C12 1 35V
C13 0.01
C14 0.001
C15 2p
C16 22p
C17 0.1 F
C18 22 6.3V
C19 2200p
D1 02FL20U
F1 1.25A
D2 RD3.6M
D4 RD5.6M
D5 RD5.6M
D8 RD5.6M
D12 RD5.6M
D13 RD5.6M
D14 RD5.6M
D15 RD5.6M
D16 MA143
D17 RD5.6M
R1 10k
R2 1k
R3 1500
R4 1800
R5 2400
R6 20k
R7 33k
S1
S2
S3
S4
S5
S6
R8 75
R9 75
R10 75
R11 75
R12 100
R13 100
R34 100
R16 2200
R17 75
R18 12 1/10W
R19 680
R20 22
R21 10k
R22 100
R23 2700
R24 1200
R25 15k
R27 3900
R28 10k
R29 10k
R30 2700
R31 8200
R32 1k
R33 820
R35 220
R37 2700
R42 1k
R43 10k
R44 22k
R45 12k
R46 8200
R47 10k
R48 10k
R49 75
Q1 DTC144EU
Q1 SW
Q2 2SC4177
Q3 2SC4177
Q4 2SA1611
Q5 2SA1611
Q6 2SC4177
Q7 2SA1611
Q8 2SC4177
Q9 2SC4177
Q10 2SC4177
Q2-Q10 VIDEO OUT DRIVER
Q11 SW
Q11 DTC144EU
IC1 S16MD01
IC1 RELAY
IC2 TC7S04F
IC2 INV.

MB-507 (MOTHER BOARD)

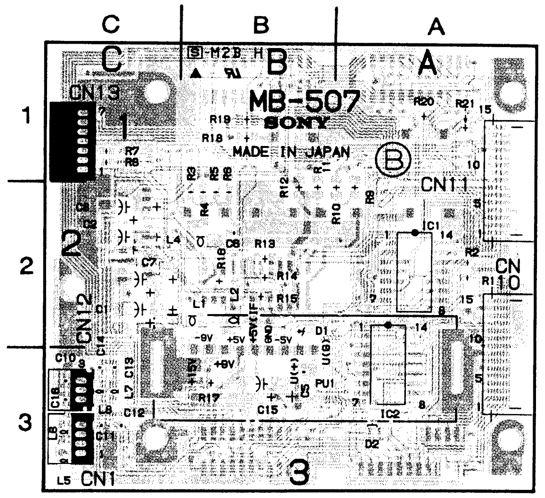
MB-507(1-651-862-11)

CN1	C-3
CN2	C-2
CN3	B-3
CN4	A-3
CN5	B-2
CN8	B-1
CN9	A-1
✱CN10	A-3
✱CN11	A-1
CN12	C-3
✱D1	B-2
✱D2	A-3
✱IC1	A-2
✱IC2	A-3
PU1	B-3

✱ : Soldering side

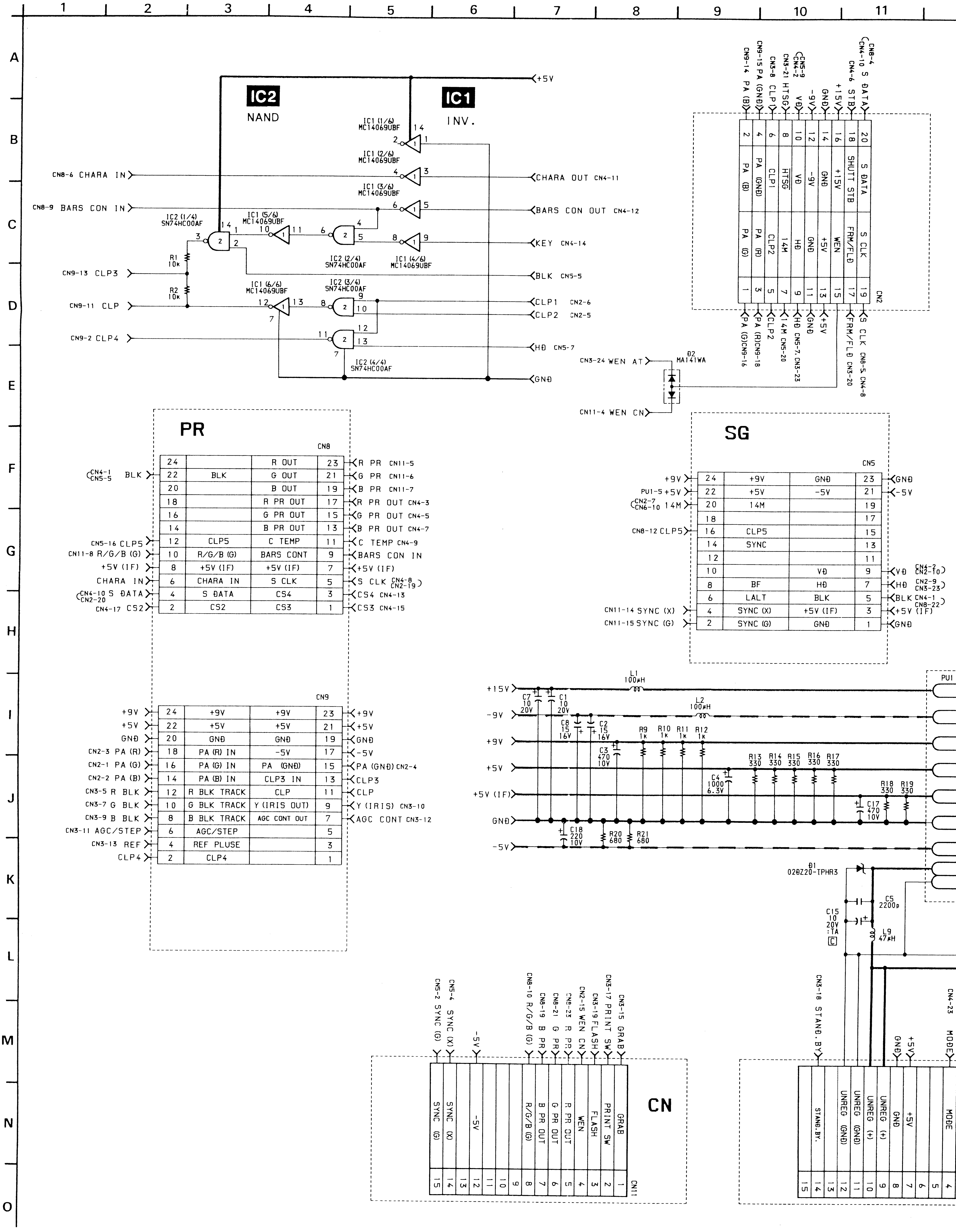

A
B
C
1
2
3
CN9
CN8
CN2
CN13
CN5
CN12
CN1
CN4
CN3
PU1
SONY JAPAN
LOT NO.
IS No.
MB-507 1-651-862

MB-507 –COMPONENT SIDE–
1-651-862-11


C
B
A
1
2
3
CN13
MB-507
SONY
MADE IN JAPAN
CN11
CN10
CN12
IC1
IC2
D1
D2
PU1
CN1

MB-507 –SOLDERING SIDE–
1-651-862-11

MB-507 (MOTHER BOARD)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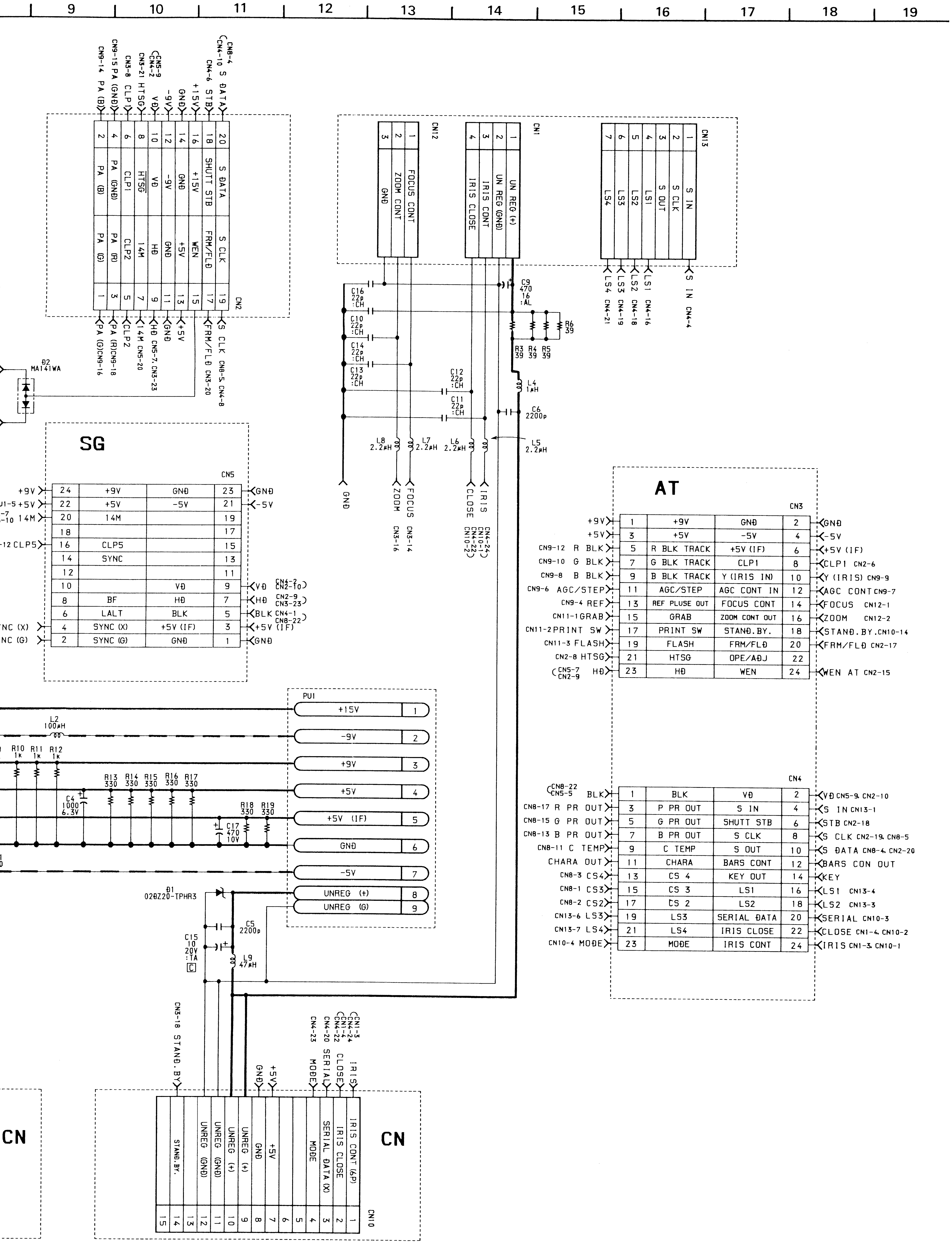
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
IC2
NAND
IC1
INV.
+5V
IC1 (1/6) MC14069UBF
IC1 (2/6) MC14069UBF
IC1 (3/6) MC14069UBF
IC1 (4/6) MC14069UBF
IC1 (5/6) MC14069UBF
IC1 (6/6) MC14069UBF
IC2 (1/4) SN74HC00AF
IC2 (2/4) SN74HC00AF
IC2 (3/4) SN74HC00AF
IC2 (4/4) SN74HC00AF
CN8-6 CHARA IN
CN8-9 BARS CON IN
CN9-13 CLP3
CN9-11 CLP
CN9-2 CLP4
R1 10k
R2 10k
CHARA OUT CN4-11
BARS CON OUT CN4-12
KEY CN4-14
BLK CN5-5
CLP1 CN2-6
CLP2 CN2-5
HD CN5-7
GND
CN3-24 WEN AT
D2 MA141WA
CN11-4 WEN CN
CN9-14 PA (B)
CN9-15 PA (GND)
CN3-8 CLP1
CN3-21 HTSG
CN5-9 CN4-2 VD
-9V
GND
+15V
CN4-6 STB
CN8-4 CN4-10 S DATA
CN2
2 PA (B) | PA (G) 1
4 PA (GND) | PA (R) 3
6 CLP1 | CLP2 5
8 HTSG | 14M 7
10 VD | HD 9
12 -9V | GND 11
14 GND | +5V 13
16 +15V | WEN 15
18 SHUTT STB | FRM/FLD 17
20 S DATA | S CLK 19
PA (G) CN9-16
PA (R) CN9-18
CLP2
14M CN5-20
HD CN5-7, CN3-23
GND
+5V
FRM/FLD CN3-20
S CLK CN8-5, CN4-8
PR
CN8
24 | | R OUT | 23 R PR CN11-5
CN4-1 CN5-5 BLK 22 | BLK | G OUT | 21 G PR CN11-6
20 | | B OUT | 19 B PR CN11-7
18 | | R PR OUT | 17 R PR OUT CN4-3
16 | | G PR OUT | 15 G PR OUT CN4-5
14 | | B PR OUT | 13 B PR OUT CN4-7
CN5-16 CLP5 12 | CLP5 | C TEMP | 11 C TEMP CN4-9
CN11-8 R/G/B (G) 10 | R/G/B (G) | BARS CONT | 9 BARS CON IN
+5V (IF) 8 | +5V (IF) | +5V (IF) | 7 +5V (IF)
CHARA IN 6 | CHARA IN | S CLK | 5 S CLK CN4-8 CN2-19
CN4-10 CN2-20 S DATA 4 | S DATA | CS4 | 3 CS4 CN4-13
CN4-17 CS2 2 | CS2 | CS3 | 1 CS3 CN4-15
CN9
+9V 24 | +9V | +9V | 23 +9V
+5V 22 | +5V | +5V | 21 +5V
GND 20 | GND | GND | 19 GND
CN2-3 PA (R) 18 | PA (R) IN | -5V | 17 -5V
CN2-1 PA (G) 16 | PA (G) IN | PA (GND) | 15 PA (GND) CN2-4
CN2-2 PA (B) 14 | PA (B) IN | CLP3 IN | 13 CLP3
CN3-5 R BLK 12 | R BLK TRACK | CLP | 11 CLP
CN3-7 G BLK 10 | G BLK TRACK | Y (IRIS OUT) | 9 Y (IRIS) CN3-10
CN3-9 B BLK 8 | B BLK TRACK | AGC CONT OUT | 7 AGC CONT CN3-12
CN3-11 AGC/STEP 6 | AGC/STEP | | 5
CN3-13 REF 4 | REF PLUSE | | 3
CLP4 2 | CLP4 | | 1
SG
CN5
+9V 24 | +9V | GND | 23 GND
PU1-5 +5V 22 | +5V | -5V | 21 -5V
CN2-7 CN6-10 14M 20 | 14M | | 19
18 | | | 17
CN8-12 CLP5 16 | CLP5 | | 15
14 | SYNC | | 13
12 | | | 11
10 | | VD | 9 VD CN4-2 CN2-10
8 | BF | HD | 7 HD CN2-9 CN3-23
6 | LALT | BLK | 5 BLK CN4-1 CN8-22
CN11-14 SYNC (X) 4 | SYNC (X) | +5V (IF) | 3 +5V (IF)
CN11-15 SYNC (G) 2 | SYNC (G) | GND | 1 GND
+15V
-9V
+9V
+5V
+5V (IF)
GND
-5V
L1 100µH
L2 100µH
C7 10 20V
C1 10 20V
C8 15 16V
C2 15 16V
C3 470 10V
C4 1000 6.3V
C18 220 10V
C17 470 10V
R9 1k
R10 1k
R11 1k
R12 1k
R13 330
R14 330
R15 330
R16 330
R17 330
R18 330
R19 330
R20 680
R21 680
PU1
D1 02DZ20-TPHR3
C5 2200p
C15 10 20V :TA
C
L9 47µH
CN5-2 SYNC (G)
CN5-4 SYNC (X)
-5V
CN8-10 R/G/B (G)
CN8-19 B PR
CN8-21 G PR
CN8-23 R PR
CN2-15 WEN CN
CN3-19 FLASH
CN3-17 PRINT SW
CN3-15 GRAB
CN
CN11
15 SYNC (G)
14 SYNC (X)
13
12 -5V
11
10
9
8 R/G/B (G)
7 B PR OUT
6 G PR OUT
5 R PR OUT
4 WEN
3 FLASH
2 PRINT SW
1 GRAB
CN3-18 STAND.BY
GND
+5V
CN4-23 MODE
15 STAND.BY.
14
13
12 UNREG (GND)
11 UNREG (GND)
10 UNREG (+)
9 UNREG (+)
8 GND
7 +5V
6
5
4 MODE



9
10
11
12
13
14
15
16
17
18
19
CN2
S DATA
S CLK
SHUTT STB
FRM/FLD
+15V
WEN
GND
+5V
-9V
HD
VD
14M
HTSG
CLP1
CLP2
PA (GND)
PA (R)
PA (B)
PA (G)
D2
MA141WA
CN12
FOCUS CONT
ZOOM CONT
GND
CN1
UN REG (+)
UN REG (GND)
IRIS CONT
IRIS CLOSE
CN13
S IN
S CLK
S OUT
LS1
LS2
LS3
LS4
C16 22p :CH
C10 22p :CH
C14 22p :CH
C13 22p :CH
C12 22p :CH
C11 22p :CH
C9 470 16 :AL
R3 39
R4 39
R5 39
R6 39
L4 1μH
C6 2200p
L8 2.2μH
L7 2.2μH
L6 2.2μH
L5 2.2μH
GND
ZOOM CN3-16
FOCUS CN3-14
CLOSE
IRIS
SG
CN5
+9V
GND
+5V
-5V
14M
CLP5
SYNC
VD
BF
HD
LALT
BLK
SYNC (X)
+5V (IF)
SYNC (G)
AT
CN3
R BLK TRACK
G BLK TRACK
B BLK TRACK
Y (IRIS IN)
AGC/STEP
AGC CONT IN
REF PLUSE OUT
FOCUS CONT
GRAB
ZOOM CONT OUT
PRINT SW
STAND.BY.
FLASH
FRM/FLD
HTSG
OPE/ADJ
HD
WEN
CN4
BLK
VD
P PR OUT
S IN
G PR OUT
SHUTT STB
B PR OUT
S CLK
C TEMP
S OUT
CHARA
BARS CONT
CS 4
KEY OUT
CS 3
LS1
CS 2
LS2
LS3
SERIAL DATA
LS4
IRIS CLOSE
MODE
IRIS CONT
PU1
+15V
-9V
+9V
+5V
+5V (IF)
GND
-5V
UNREG (+)
UNREG (G)
L2 100μH
R10 1k
R11 1k
R12 1k
R13 330
R14 330
R15 330
R16 330
R17 330
R18 330
R19 330
C4 1000 6.3V
C17 470 10V
D1 02DZ20-TPHR3
C5 2200p
C15 10 20V :TA
L9 47μH
CN
CN10
IRIS CONT (6P)
IRIS CLOSE
SERIAL DATA (X)
MODE
+5V
GND
UNREG (+)
UNREG (GND)
STAND.BY.
CN3-18 STAND.BY.

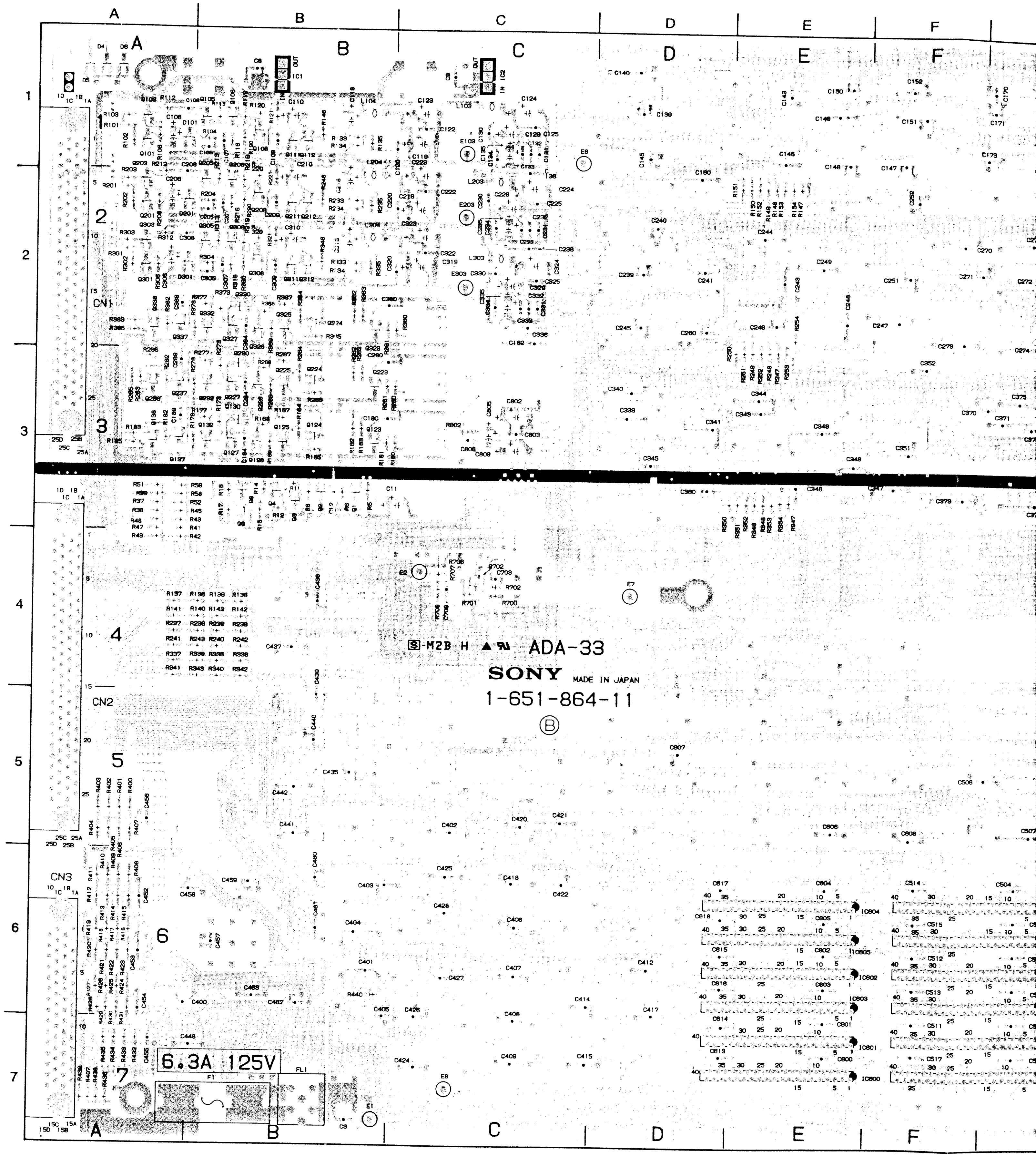
4-2. PROCESSOR SECTION

ADA-33 (A/D, D/A, MEMORY)

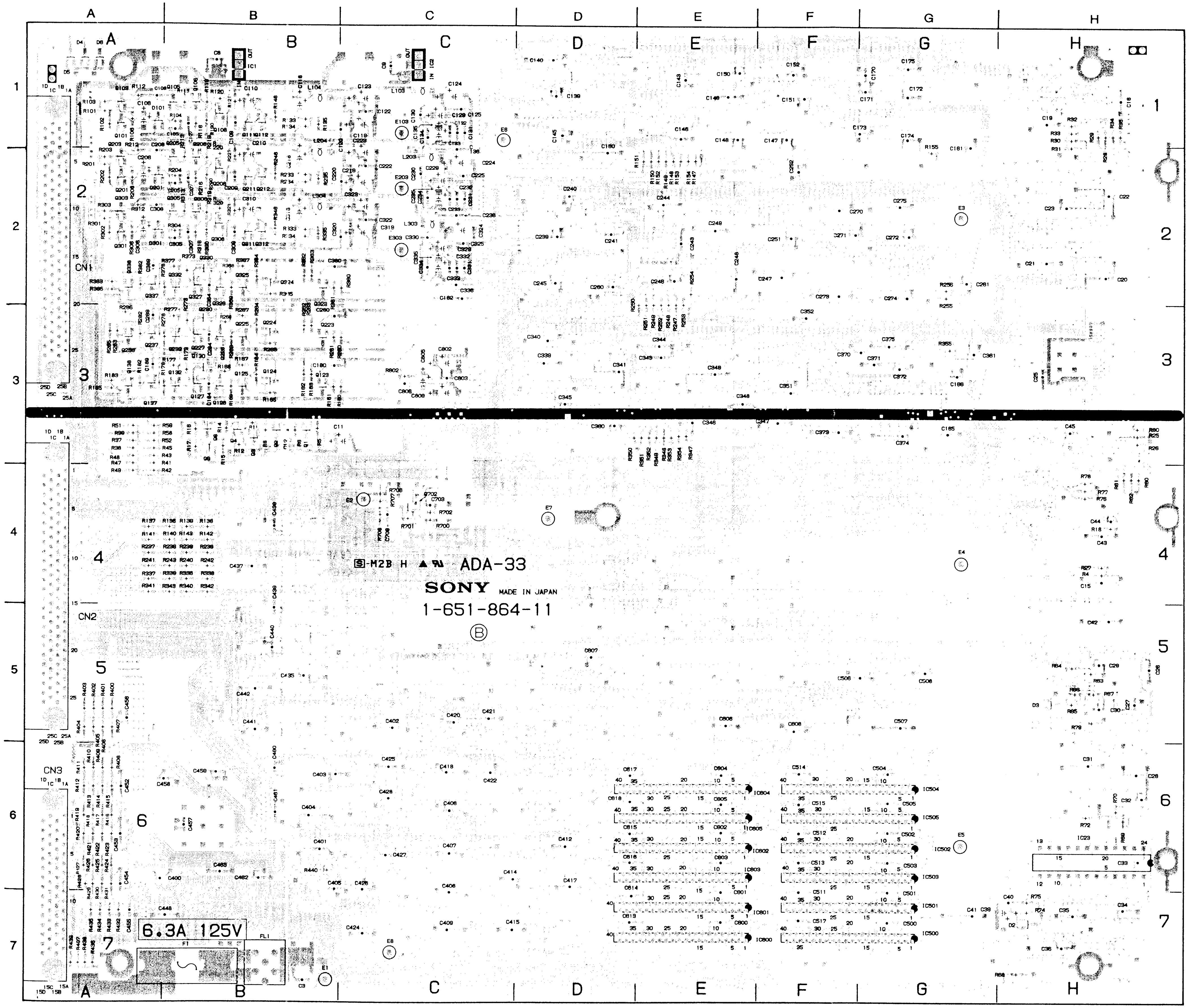
ADA-33(1-651-864-11)

CN1	A-3	IC111	F-2	IC335	G-3	IC522	F-5	*Q211	B-2	RV304	B-2
CN2	A-5	IC112	E-2	IC400	B-6	IC600	E-7	*Q212	B-2	RV305	B-2
CN3	A-7	IC113	E-1	IC401	B-6	IC601	E-7	Q213	B-2		
		IC114	E-1	IC402	C-5	IC602	E-6	Q214	B-2	S1	H-3
*D2	H-7	IC115	F-1	IC403	B-6	IC603	E-6	Q215	B-2	S2	H-3
*D3	H-5	IC116	F-1	IC404	B-6	IC604	E-6	*Q223	B-3	S6	H-3
*D4	A-1	IC122	F-4	IC405	B-7	IC605	E-6	*Q224	B-3	S7	H-2
*D5	A-1	IC124	D-2	IC406	C-6	IC606	E-5	*Q225	B-3	S8	H-2
*D6	A-1	IC125	G-2	IC407	C-6	IC607	D-5	*Q226	B-3		
*D101	A-1	IC126	C-3	IC408	C-7	IC608	F-5	*Q227	B-3	TP1	B-7
*D201	A-2	IC127	G-3	IC409	C-7	IC609	E-5	Q228	B-3	TP2	A-1
*D301	A-2	IC128	G-3	IC410	D-6	IC610	D-5	Q229	B-3	TP3	C-1
*D701	C-4	IC130	F-1	IC411	D-6	IC611	F-5	*Q230	B-3	TP4	B-1
		IC131	F-1	IC412	D-6	IC612	D-5	Q231	B-3	TP5	C-1
FL1	B-7	IC132	G-1	IC413	C-6	IC702	C-4	*Q232	B-3	TP6	C-3
FL101	B-3	IC133	F-2	IC414	C-7	IC801	C-3	Q233	B-3	TP7	C-3
FL201	B-3	IC134	G-2	IC415	C-7			Q234	A-3	TP8	B-3
FL301	B-2	IC135	G-1	IC416	D-7	*Q1	B-3	Q235	A-3	TP9	H-3
		IC201	C-2	IC417	D-7	*Q2	B-3	Q236	A-3	TP10	H-4
F1	B-7	IC202	C-2	IC418	C-6	*Q3	B-3	*Q237	A-3	TP11	C-4
		IC203	D-2	IC419	D-5	*Q4	B-3	*Q238	A-3	TP12	H-6
IC1	B-1	IC204	D-2	IC420	C-5	Q5	B-3	*Q301	A-2	TP13	H-3
IC2	C-1	IC205	D-2	IC421	C-5	Q6	B-3	Q302	B-2	TP14	B-4
IC3	H-1	IC206	D-2	IC422	C-6	Q7	B-3	*Q303	A-2	TP101	B-1
IC4	H-1	IC207	E-2	IC423	C-6	*Q8	B-3	Q304	A-2	TP103	B-1
IC5	G-1	IC208	E-2	IC424	C-7	*Q9	B-3	*Q305	B-2	TP104	C-1
IC6	H-1	IC209	D-2	IC425	C-6	*Q101	A-1	*Q306	B-2	TP105	C-1
IC7	H-2	IC210	E-2	IC426	C-7	Q102	B-1	Q307	B-2	TP106	C-3
IC8	H-2	IC211	F-2	IC427	C-6	*Q103	A-1	*Q308	B-2	TP107	B-3
IC9	H-3	IC212	E-2	IC428	C-6	Q104	A-1	Q309	B-2	TP108	A-3
IC10	H-2	IC213	E-2	IC429	C-5	*Q105	B-1	Q310	B-2	TP201	B-2
IC11	H-2	IC214	E-2	IC430	B-4	*Q106	B-1	*Q311	B-2	TP203	B-2
IC12	H-2	IC215	F-2	IC431	B-4	Q107	B-1	*Q312	B-2	TP204	C-2
IC13	H-2	IC216	F-2	IC432	B-5	*Q108	B-1	Q313	B-2	TP205	C-2
IC15	H-3	IC222	D-4	IC433	B-5	Q109	B-1	Q314	B-2	TP206	C-3
IC16	H-5	IC224	D-2	IC434	B-5	Q110	B-1	Q315	B-2	TP207	B-3
IC17	H-5	IC225	G-2	IC435	B-5	*Q111	B-1	*Q323	B-2	TP208	A-3
IC18	H-6	IC230	F-2	IC436	C-5	*Q112	B-1	*Q324	B-2	TP301	B-2
IC19	H-5	IC231	F-2	IC437	B-4	Q113	B-1	*Q325	B-2	TP303	B-2
IC20	H-5	IC232	G-2	IC438	B-4	Q114	B-1	*Q326	B-2	TP304	C-2
IC21	H-6	IC233	F-2	IC439	B-5	Q115	B-1	*Q327	B-2	TP305	C-2
IC22	H-6	IC234	G-2	IC440	B-5	*Q123	B-3	Q328	B-2	TP306	C-2
IC23	H-6	IC235	G-2	IC441	B-5	*Q124	B-3	Q329	B-2	TP307	B-2
IC24	H-7	IC301	C-2	IC442	B-5	*Q125	B-3	*Q330	B-2	TP308	A-2
IC25	H-7	IC302	C-2	IC447	C-5	*Q126	B-3	Q331	B-2	TP401	C-5
IC26	H-7	IC303	D-3	IC448	B-7	*Q127	B-3	*Q332	B-2	TP402	B-5
IC27	H-6	IC304	D-3	IC449	C-5	Q128	B-3	Q333	B-2	TP403	G-5
IC28	H-7	IC305	D-3	IC450	C-5	Q129	B-3	Q334	A-2	TP404	F-6
IC29	H-7	IC306	D-3	IC451	C-5	*Q130	B-3	Q335	A-2	TP405	F-6
IC30	H-7	IC307	E-3	IC452	A-6	Q131	B-3	Q336	A-2	TP406	G-6
IC31	H-3	IC308	E-3	IC453	A-6	*Q132	B-3	*Q337	A-2	TP407	G-6
IC32	H-4	IC309	D-3	IC454	A-6	Q133	B-3	*Q338	A-2	TP408	F-6
IC33	H-5	IC310	E-3	IC455	A-7	Q134	A-3	Q701	C-4		
IC34	H-4	IC311	F-3	IC456	A-5	Q135	A-3	*Q702	C-4		
IC35	H-4	IC312	E-3	IC500	F-7	Q136	A-3	Q703	C-4		
IC36	G-7	IC313	E-3	IC501	F-7	*Q137	A-3	Q704	C-4		
IC37	H-4	IC314	E-3	IC502	F-6	*Q138	A-3				
IC101	C-1	IC315	F-3	IC503	F-6	*Q201	A-2	RV1	B-3		
IC102	C-1	IC316	F-3	IC504	F-6	Q202	B-2	RV2	B-3		
IC103	D-1	IC322	E-4	IC505	F-6	*Q203	A-2	RV3	B-3		
IC104	D-1	IC324	D-3	IC506	F-5	Q204	A-2	RV101	B-1		
IC105	D-1	IC325	G-3	IC507	G-5	*Q205	B-2	RV104	B-3		
IC106	D-1	IC330	F-3	IC508	G-5	*Q206	B-2	RV105	B-3		
IC107	E-1	IC331	F-3	IC509	F-5	Q207	B-2	RV201	B-2		
IC108	E-1	IC332	G-3	IC510	D-5	*Q208	B-2	RV204	B-3		
IC109	D-2	IC333	F-3	IC520	E-5	Q209	B-2	RV205	B-3		
IC110	E-2	IC334	G-3	IC521	D-5	Q210	B-2	RV301	B-2		

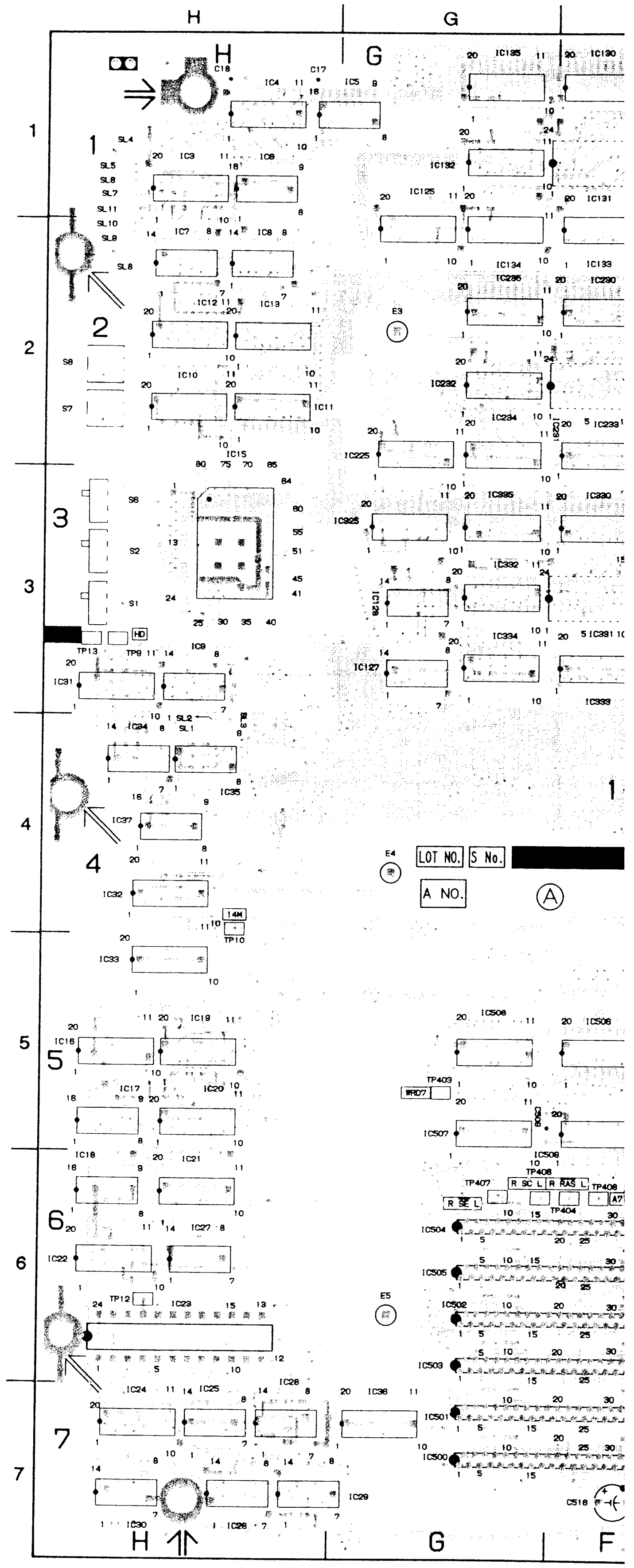
* : Soldering side

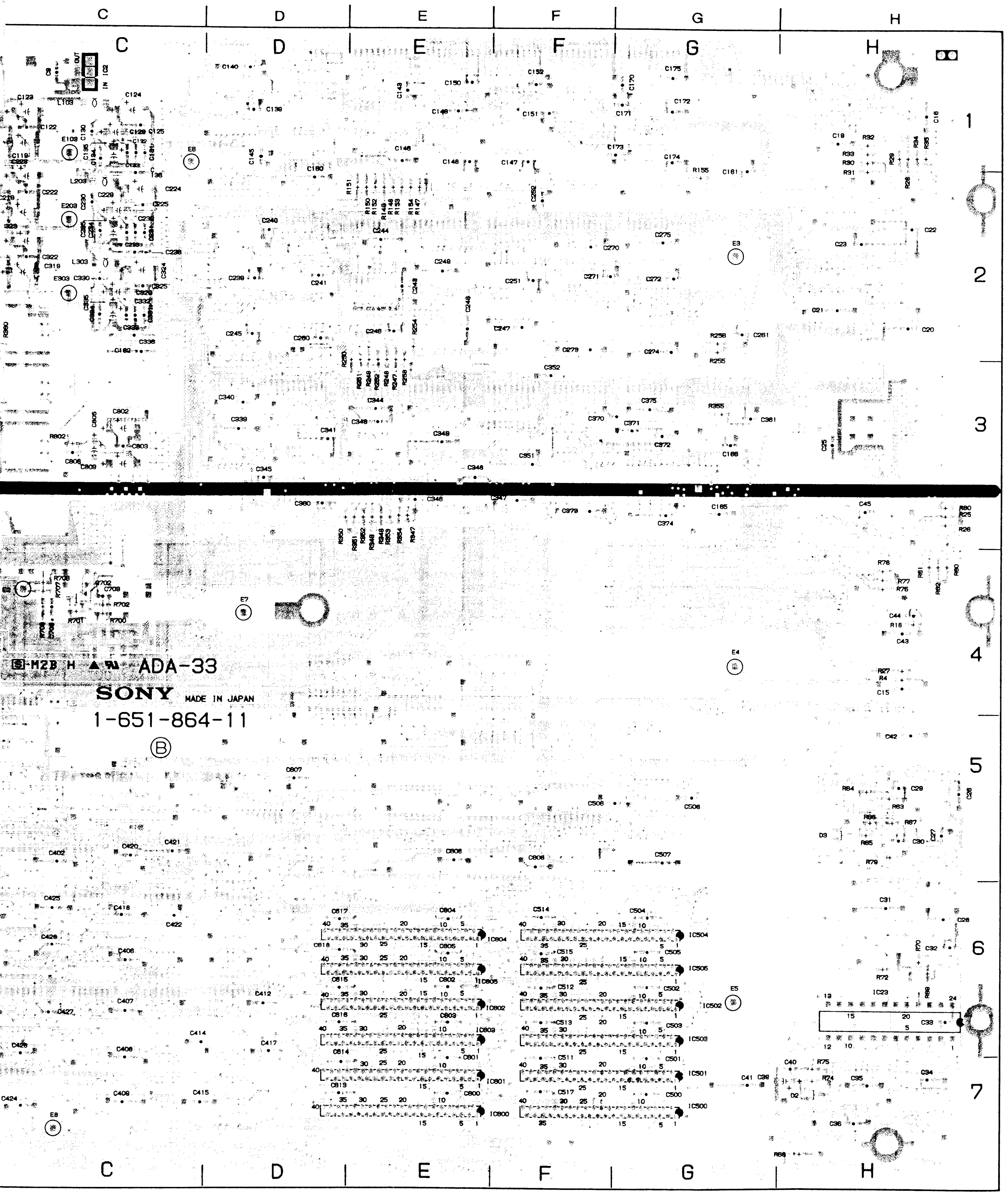


RV304	B-2
RV305	B-2
S1	H-3
S2	H-3
S6	H-3
S7	H-2
S8	H-2
TP1	B-7
TP2	A-1
TP3	C-1
TP4	B-1
TP5	C-1
TP6	C-3
TP7	C-3
TP8	B-3
TP9	H-3
TP10	H-4
TP11	C-4
TP12	H-6
TP13	H-3
TP14	B-4
TP101	B-1
TP103	B-1
TP104	C-1
TP105	C-1
TP106	C-3
TP107	B-3
TP108	A-3
TP201	B-2
TP203	B-2
TP204	C-2
TP205	C-2
TP206	C-3
TP207	B-3
TP208	A-3
TP301	B-2
TP303	B-2
TP304	C-2
TP305	C-2
TP306	C-2
TP307	B-2
TP308	A-2
TP401	C-5
TP402	B-5
TP403	G-5
TP404	F-6
TP405	F-6
TP406	G-6
TP407	G-6
TP408	F-6


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
CN1
CN2
CN3
ADA-33
SONY MADE IN JAPAN
1-651-864-11
6.3A 125V
F1
FL1

ADA-33 —SOLDERING SIDE—
1-651-864-11


H
G
F
1
2
3
4
5
6
7
LOT NO.
S No.
A NO.


C
D
E
F
G
H
1
2
3
4
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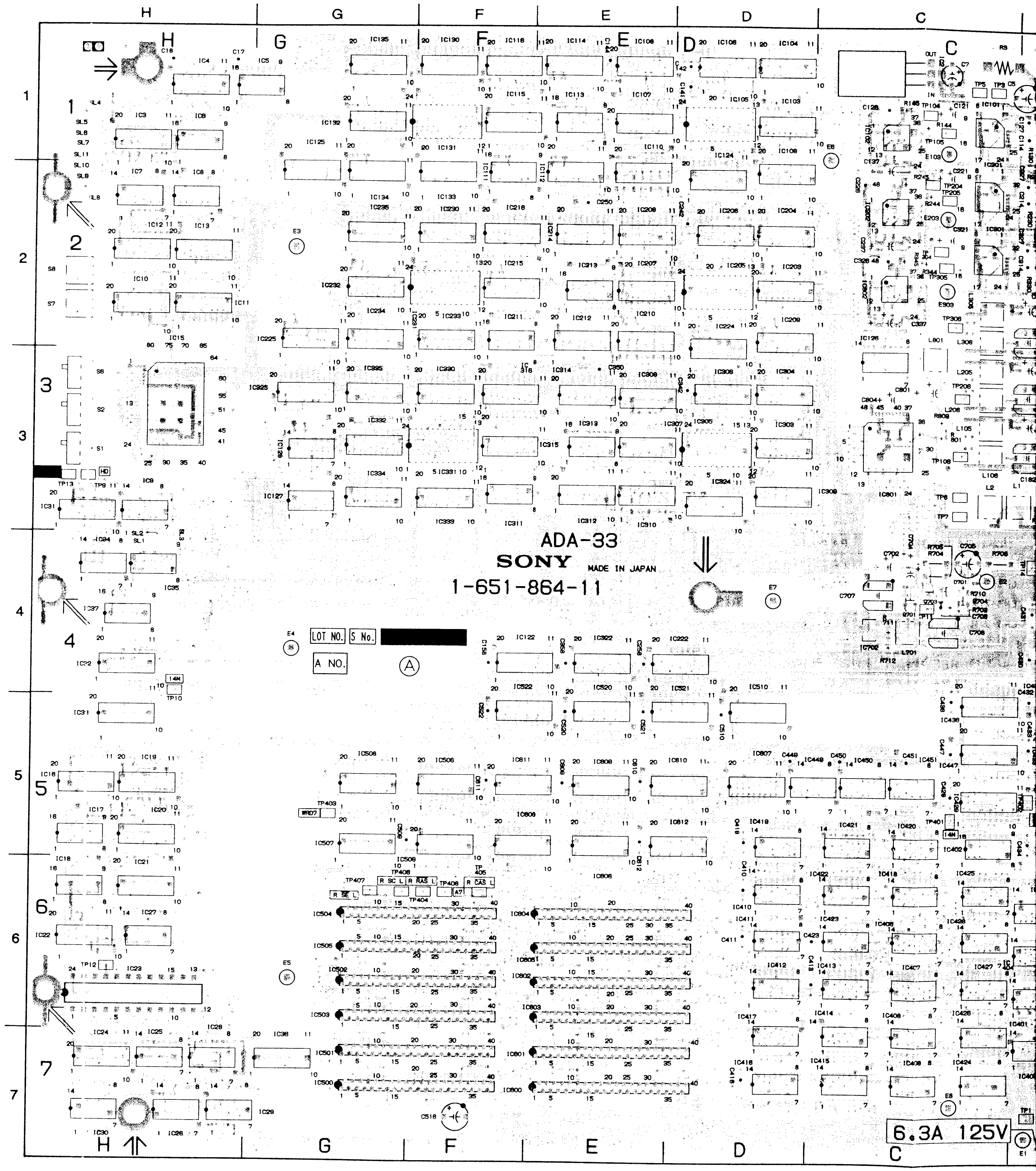
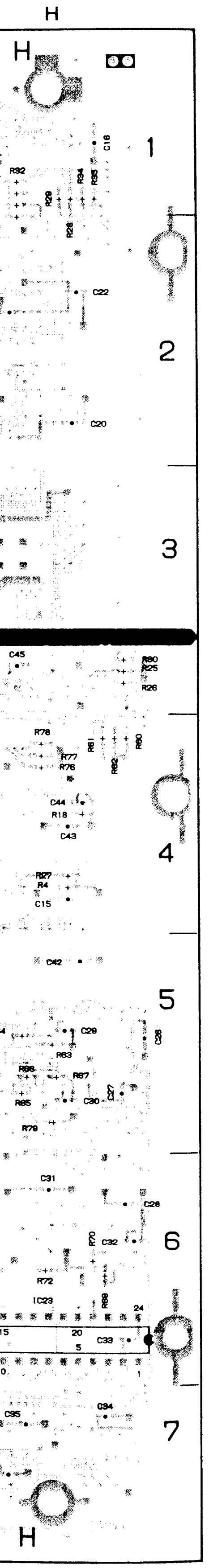
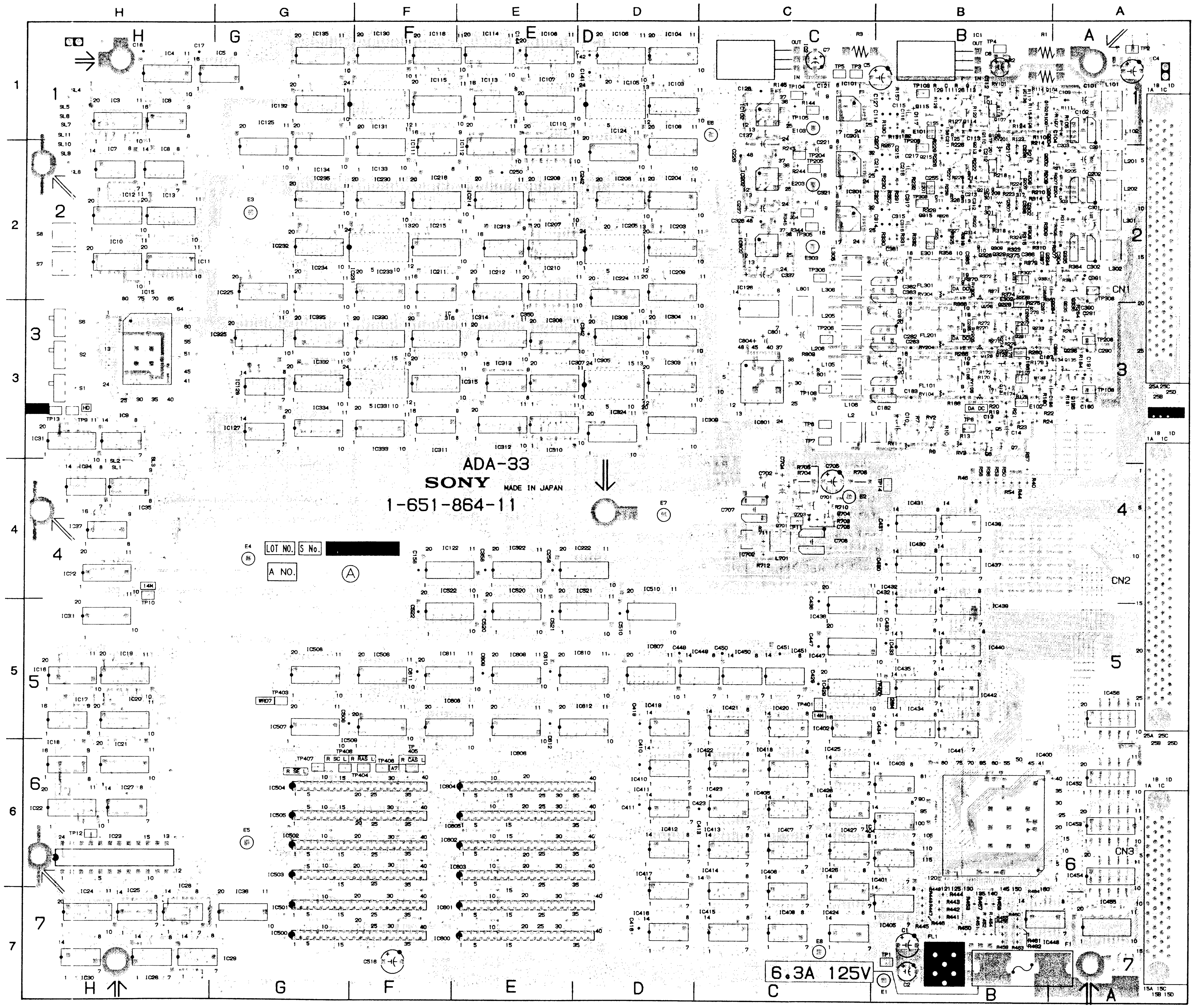
6
7
ADA-33
SONY
MADE IN JAPAN
1-651-864-11
Ⓑ

ADA-33 —SOLDERING SIDE—
1-651-864-11


H
G
F
E
D
C
1
2
3
4
5
6
7
ADA-33
SONY
MADE IN JAPAN
1-651-864-11
LOT NO.
S No.
A NO.
Ⓐ
6.3A 125V

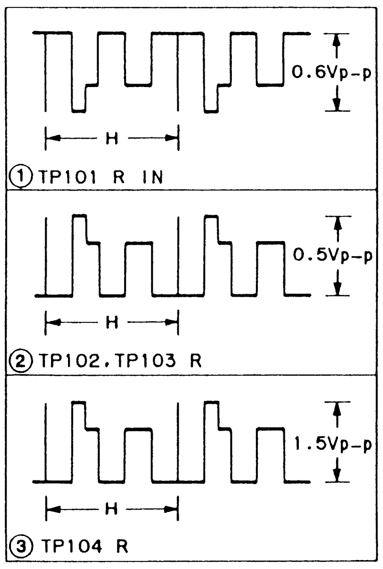


OLDERING SIDE—

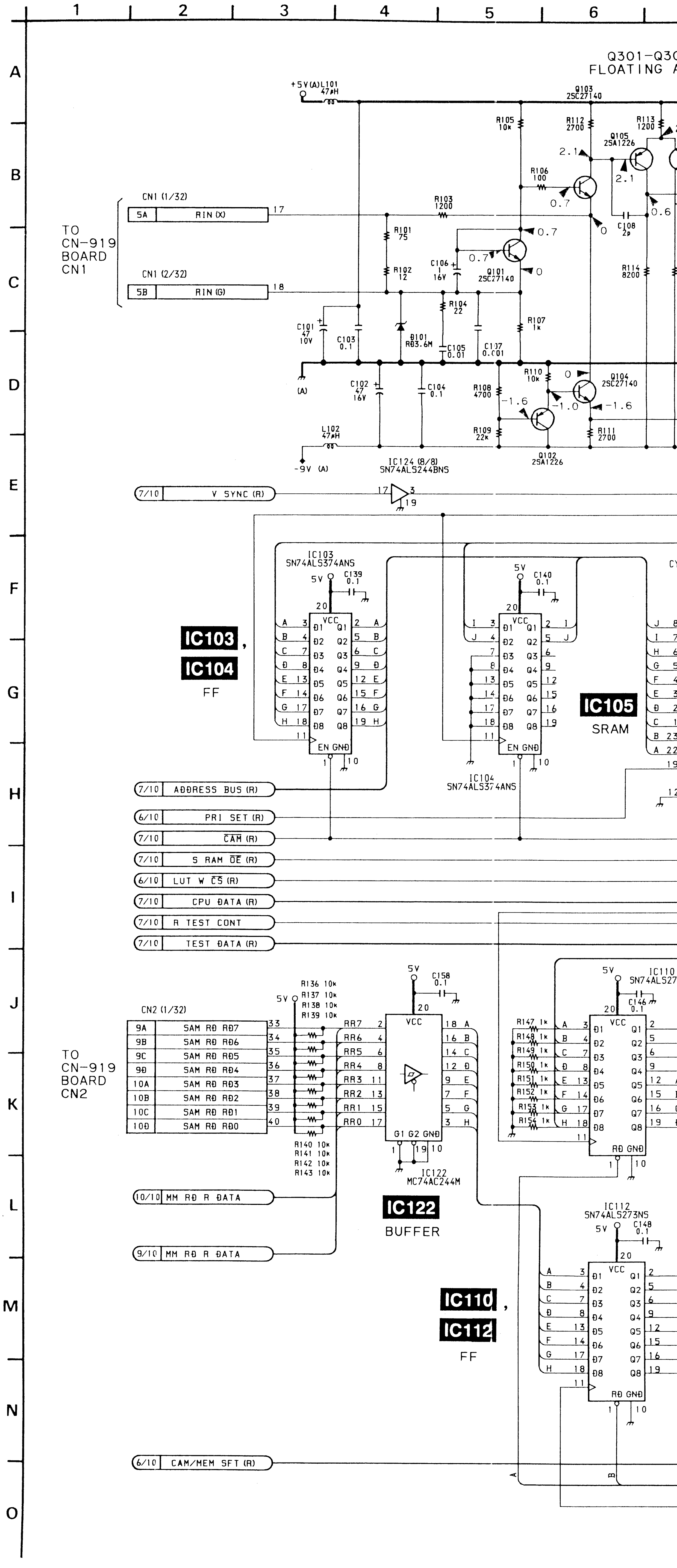

H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
ADA-33
SONY
MADE IN JAPAN
1-651-864-11
LOT NO.
S No.
A NO.
CN1
CN2
CN3
6.3A 125V

ADA-33 —COMPONENT SIDE—
1-651-864-11

ADA-33 — 1/10 — (A/D, D/A)



0.6Vp-p
H
① TP101 R IN
0.5Vp-p
H
② TP102, TP103 R
1.5Vp-p
H
③ TP104 R



1
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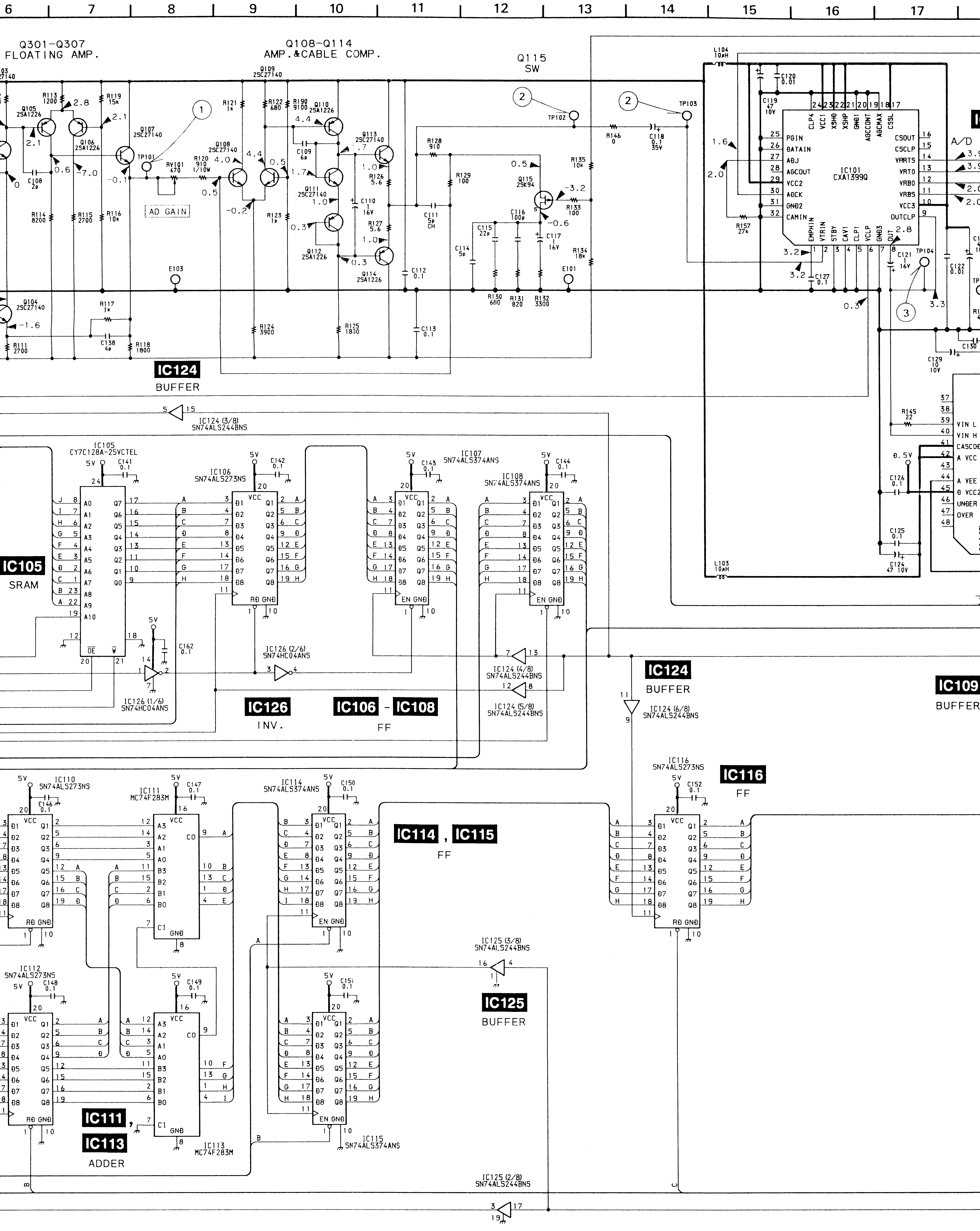
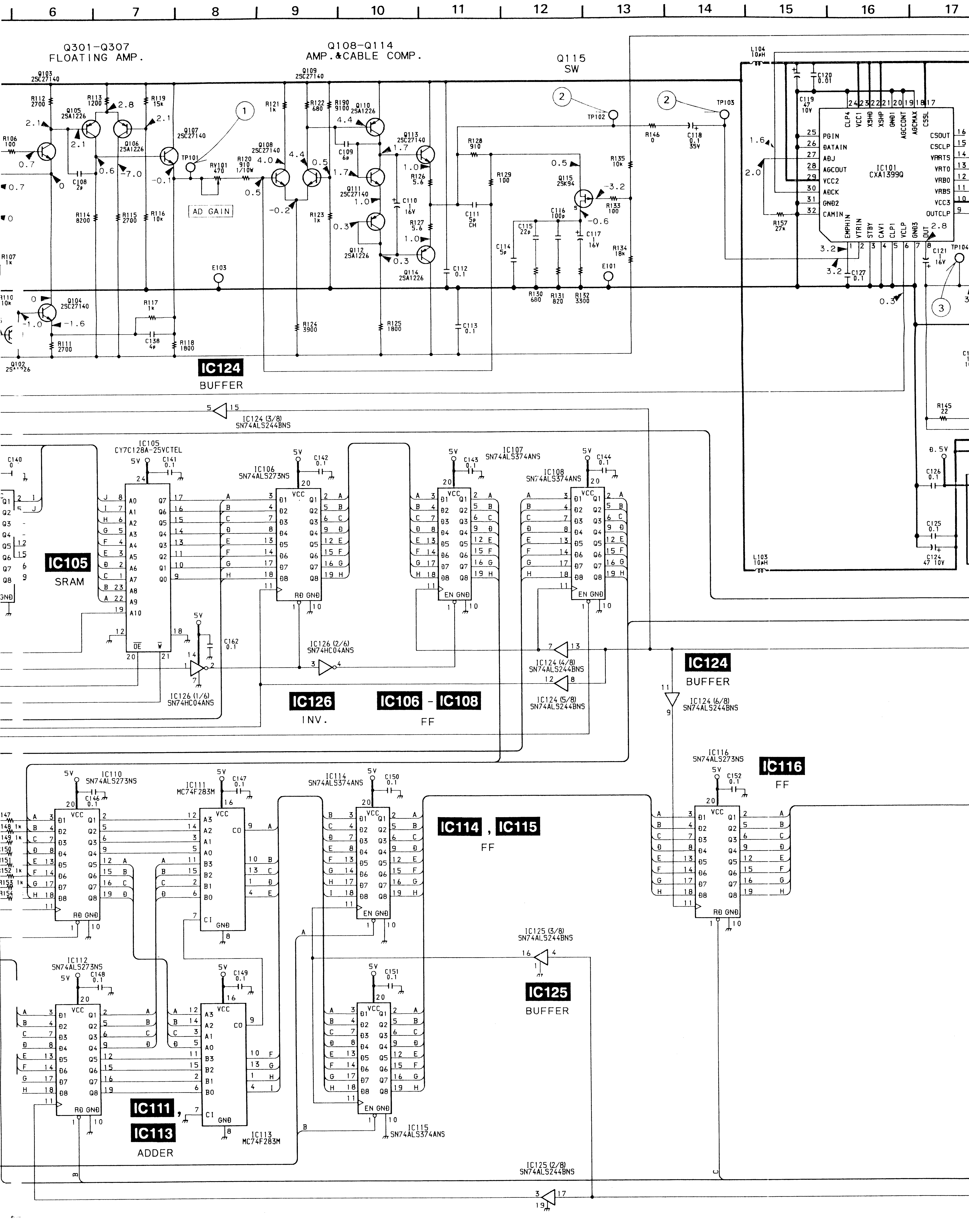
4
5
6
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
Q301-Q30
FLOATING A
+5V (A) L101 47μH
TO CN-919 BOARD CN1
CN1 (1/32)
5A RIN (X)
CN1 (2/32)
5B RIN (G)
Q103 2SC2714Q
Q105 2SA1226
Q101 2SC2714Q
Q104 2SC2714Q
Q102 2SA1226
D101 RD3.6M
L102 47μH
-9V (A)
IC124 (8/8) SN74ALS244BNS
7/10 V SYNC (R)
IC103 SN74ALS374ANS
IC104 SN74ALS374ANS
IC103, IC104 FF
IC105 SRAM
7/10 ADDRESS BUS (R)
6/10 PRI SET (R)
7/10 CAM (R)
7/10 S RAM OE (R)
6/10 LUT W CS (R)
7/10 CPU DATA (R)
7/10 R TEST CONT
7/10 TEST DATA (R)
TO CN-919 BOARD CN2
CN2 (1/32)
9A SAM RD RD7
9B SAM RD RD6
9C SAM RD RD5
9D SAM RD RD4
10A SAM RD RD3
10B SAM RD RD2
10C SAM RD RD1
10D SAM RD RD0
IC122 MC74AC244M
IC122 BUFFER
IC110 SN74ALS27
IC112 SN74ALS273NS
IC110, IC112 FF
10/10 MM RD R DATA
9/10 MM RD R DATA
6/10 CAM/MEM SFT (R)

6
7
8
9
10
11
12
13
14
15
16
17
Q301-Q307
FLOATING AMP.
Q108-Q114
AMP.&CABLE COMP.
Q115
SW
AD GAIN
TP101
TP102
TP103
TP104
IC101
CXA1399Q
A/D
IC124
BUFFER
IC105
CY7C128A-25VCTEL
IC105
SRAM
IC106
SN74ALS273NS
IC107
SN74ALS374ANS
IC108
SN74ALS374ANS
IC126 (1/6)
SN74HC04ANS
IC126 (2/6)
SN74HC04ANS
IC126
INV.
IC106 - IC108
FF
IC124 (3/8)
SN74ALS244BNS
IC124 (4/8)
SN74ALS244BNS
IC124 (5/8)
SN74ALS244BNS
IC124 (6/8)
SN74ALS244BNS
IC124
BUFFER
IC109
BUFFER
IC110
SN74ALS273NS
IC111
MC74F283M
IC112
SN74ALS273NS
IC113
MC74F283M
IC111, IC113
ADDER
IC114
SN74ALS374ANS
IC115
SN74ALS374ANS
IC114, IC115
FF
IC125 (3/8)
SN74ALS244BNS
IC125 (2/8)
SN74ALS244BNS
IC125
BUFFER
IC116
SN74ALS273NS
IC116
FF
L103
10μH
L104
10μH


6
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8
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12
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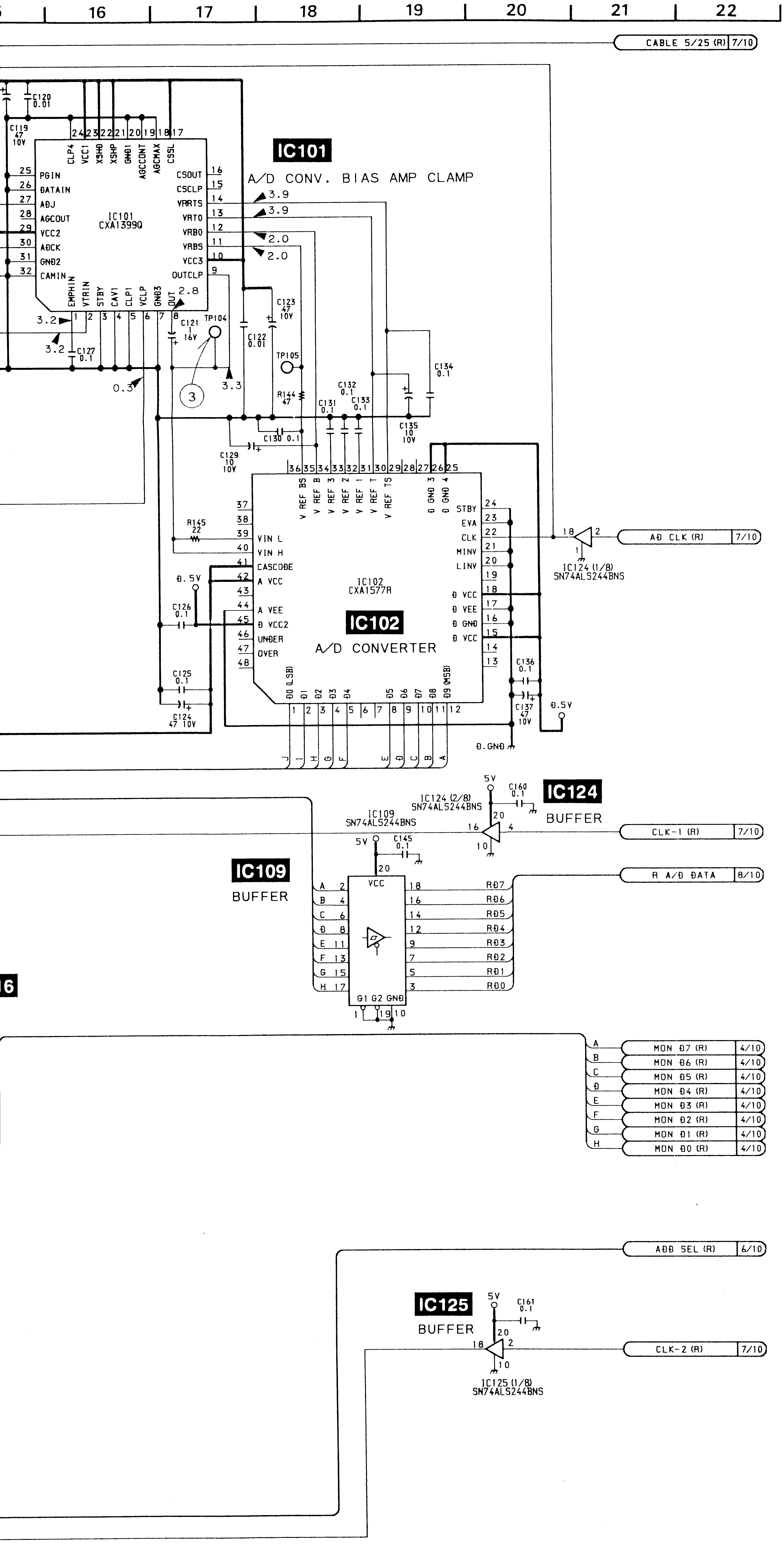
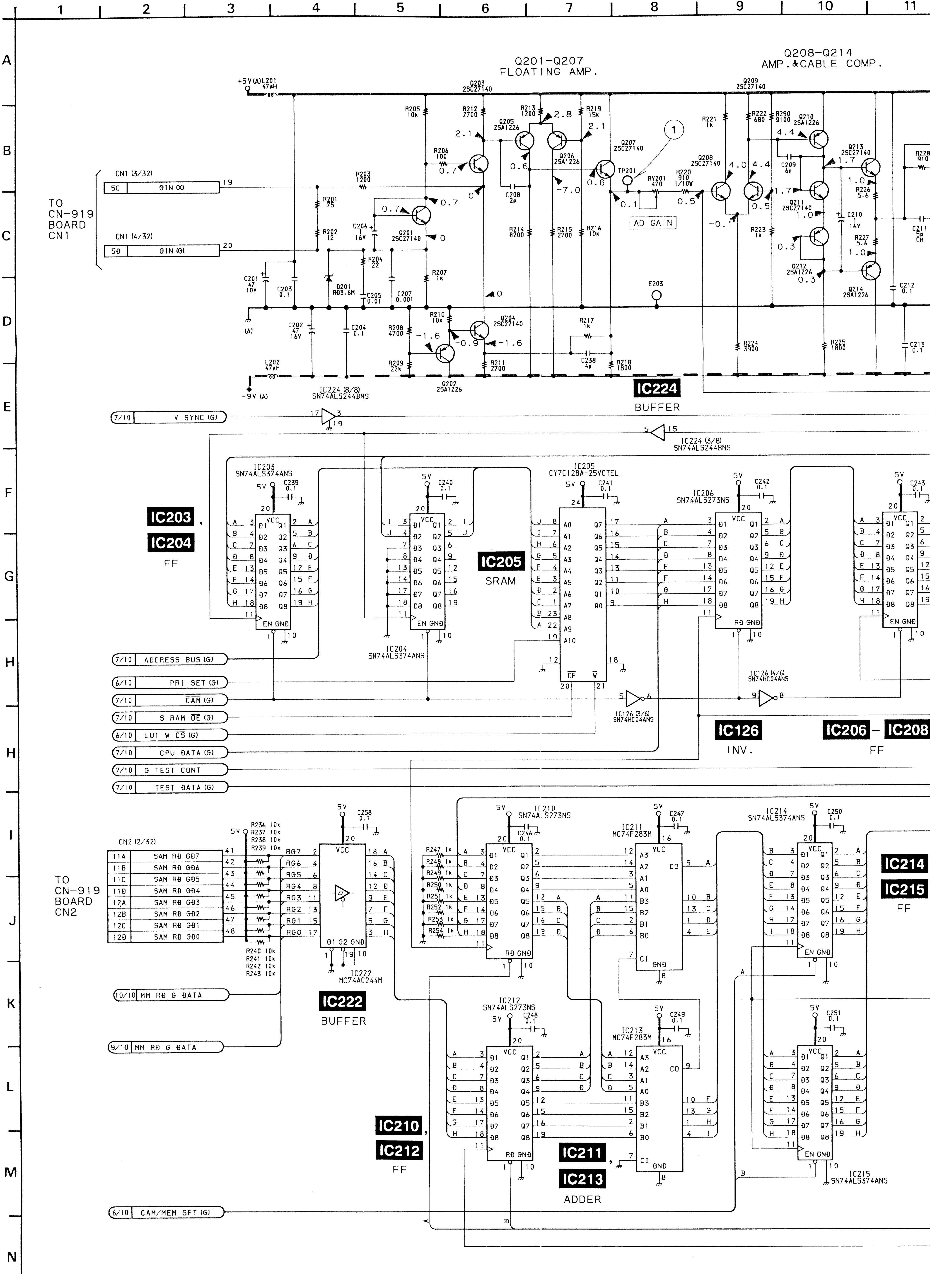
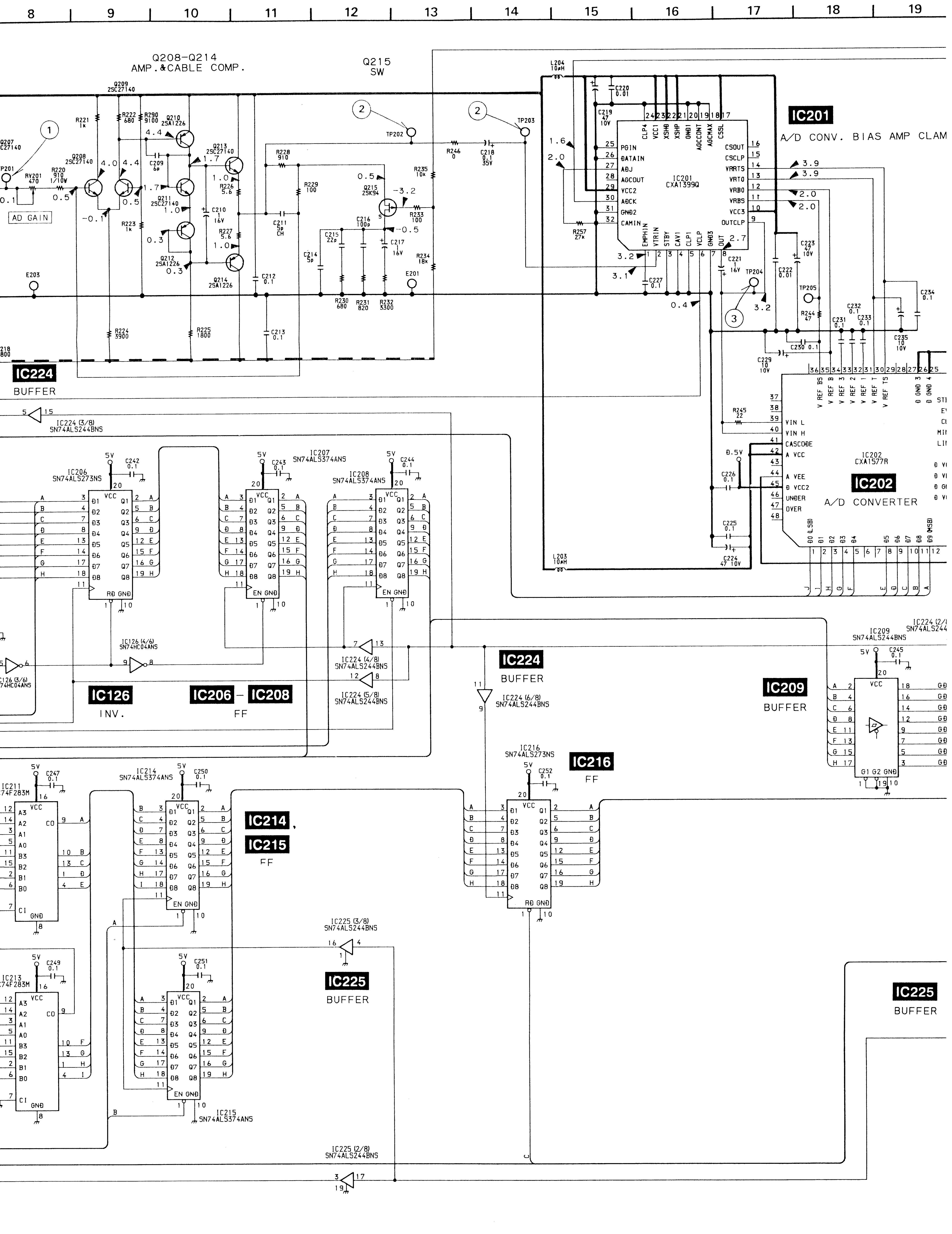
17
Q301-Q307
FLOATING AMP.
Q108-Q114
AMP.&CABLE COMP.
Q115
SW
Q103 2SC27140
Q109 2SC27140
Q105 2SA1226
Q106 2SA1226
Q107 2SC27140
Q108 2SC27140
Q110 2SA1226
Q111 2SC27140
Q112 2SA1226
Q113 2SC27140
Q114 2SA1226
Q115 2SK94
Q104 2SC27140
Q102 2SA1226
TP101
TP102
TP103
TP104
RV101 470
AD GAIN
E103
E101
L104 10µH
L103 10µH
IC101 CXA1399Q
PGIN
DATAIN
ADJ
AGCOUT
VCC2
ADCK
GND2
CAMIN
CSOUT
CSCLP
VRRTS
VRTO
VRBO
VRBS
VCC3
OUTCLP
CLP4
VCC1
XSHD
XSHP
GND1
AGCCONT
AGCMAX
CSSL
EMPHIN
VTRIN
STBY
CAV1
CLP1
VCLP
GND3
OUT
IC124
BUFFER
IC124 (3/8) SN74ALS244BNS
IC105 CY7C128A-25VCTEL
IC105
SRAM
IC106 SN74ALS273NS
IC107 SN74ALS374ANS
IC108 SN74ALS374ANS
IC126 (1/6) SN74HC04ANS
IC126 (2/6) SN74HC04ANS
IC124 (4/8) SN74ALS244BNS
IC124 (5/8) SN74ALS244BNS
IC124 (6/8) SN74ALS244BNS
IC126
INV.
IC106 - IC108
FF
IC124
BUFFER
IC110 SN74ALS273NS
IC111 MC74F283M
IC114 SN74ALS374ANS
IC114 , IC115
FF
IC116 SN74ALS273NS
IC116
FF
IC125 (3/8) SN74ALS244BNS
IC125
BUFFER
IC112 SN74ALS273NS
IC113 MC74F283M
IC111 , IC113
ADDER
IC115 SN74ALS374ANS
IC125 (2/8) SN74ALS244BNS
5V
VCC
RD GND
EN GND
CO
CI


16
17
18
19
20
21
22
CABLE 5/25 (R) 7/10
IC101
A/D CONV. BIAS AMP CLAMP
IC101
CXA1399Q
CLP4
VCC1
XSHD
XSHP
GND1
AGCCONT
AGCMAX
CSSL
PGIN
DATAIN
ADJ
AGCOUT
VCC2
ADCK
GND2
CAMIN
EMPHIN
VTRIN
STBY
CAV1
CLP1
VCLP
GND3
OUT
CSOUT
CSCLP
VRRTS
VRTO
VRBO
VRBS
VCC3
OUTCLP
3.9
3.9
2.0
2.0
2.8
3.2
3.2
0.3
3.3
C120 0.01
C119 47 10V
C121 1 16V
C122 0.01
C123 47 10V
C127 0.1
TP104
TP105
R144 47
C131 0.1
C132 0.1
C133 0.1
C134 0.1
C135 10 10V
C130 0.1
C129 10 10V
R145 22
C126 0.1
C125 0.1
C124 47 10V
C136 0.1
C137 47 10V
0.5V
0.5V
D.GND
IC102
CXA1577R
A/D CONVERTER
V REF BS
V REF B
V REF 3
V REF 2
V REF 1
V REF T
V REF TS
D GND 3
D GND 4
VIN L
VIN H
CASCODE
A VCC
A VEE
D VCC2
UNDER
OVER
STBY
EVA
CLK
MINV
LINV
D VCC
D VEE
D GND
D VCC
D0 (LSB)
D1
D2
D3
D4
D5
D6
D7
D8
D9 (MSB)
IC124 (1/8)
SN74ALS244BNS
AD CLK (R) 7/10
IC124
BUFFER
IC124 (2/8)
SN74ALS244BNS
C160 0.1
5V
CLK-1 (R) 7/10
IC109
SN74ALS244BNS
C145 0.1
5V
IC109
BUFFER
VCC
G1 G2 GND
RD7
RD6
RD5
RD4
RD3
RD2
RD1
RD0
R A/D DATA 8/10
MON D7 (R) 4/10
MON D6 (R) 4/10
MON D5 (R) 4/10
MON D4 (R) 4/10
MON D3 (R) 4/10
MON D2 (R) 4/10
MON D1 (R) 4/10
MON D0 (R) 4/10
ADD SEL (R) 6/10
IC125
BUFFER
5V
C161 0.1
CLK-2 (R) 7/10
IC125 (1/8)
SN74ALS244BNS


Q201–Q207
FLOATING AMP.
Q208–Q214
AMP.&CABLE COMP.
TO CN-919 BOARD CN1
CN1 (3/32)
5C GIN (X)
CN1 (4/32)
5D GIN (G)
AD GAIN
TP201
RV201 470
IC224
BUFFER
IC224 (8/8) SN74ALS244BNS
IC224 (3/8) SN74ALS244BNS
7/10 V SYNC (G)
IC203, IC204
FF
IC203 SN74ALS374ANS
IC204 SN74ALS374ANS
IC205
SRAM
IC205 CY7C128A-25VCTEL
IC206 SN74ALS273NS
IC126
INV.
IC126 (3/6) SN74HC04ANS
IC126 (4/6) SN74HC04ANS
IC206 - IC208
FF
7/10 ADDRESS BUS (G)
6/10 PRI SET (G)
7/10 CAM (G)
7/10 S RAM OE (G)
6/10 LUT W CS (G)
7/10 CPU DATA (G)
7/10 G TEST CONT
7/10 TEST DATA (G)
TO CN-919 BOARD CN2
CN2 (2/32)
11A SAM RD GD7
11B SAM RD GD6
11C SAM RD GD5
11D SAM RD GD4
12A SAM RD GD3
12B SAM RD GD2
12C SAM RD GD1
12D SAM RD GD0
IC222
BUFFER
IC222 MC74AC244M
10/10 MM RD G DATA
9/10 MM RD G DATA
IC210 SN74ALS273NS
IC211 MC74F283M
IC212 SN74ALS273NS
IC213 MC74F283M
IC214 SN74ALS374ANS
IC215 SN74ALS374ANS
IC210, IC212
FF
IC211, IC213
ADDER
IC214, IC215
FF
6/10 CAM/MEM SFT (G)
+5V (A)
-9V (A)


8
9
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12
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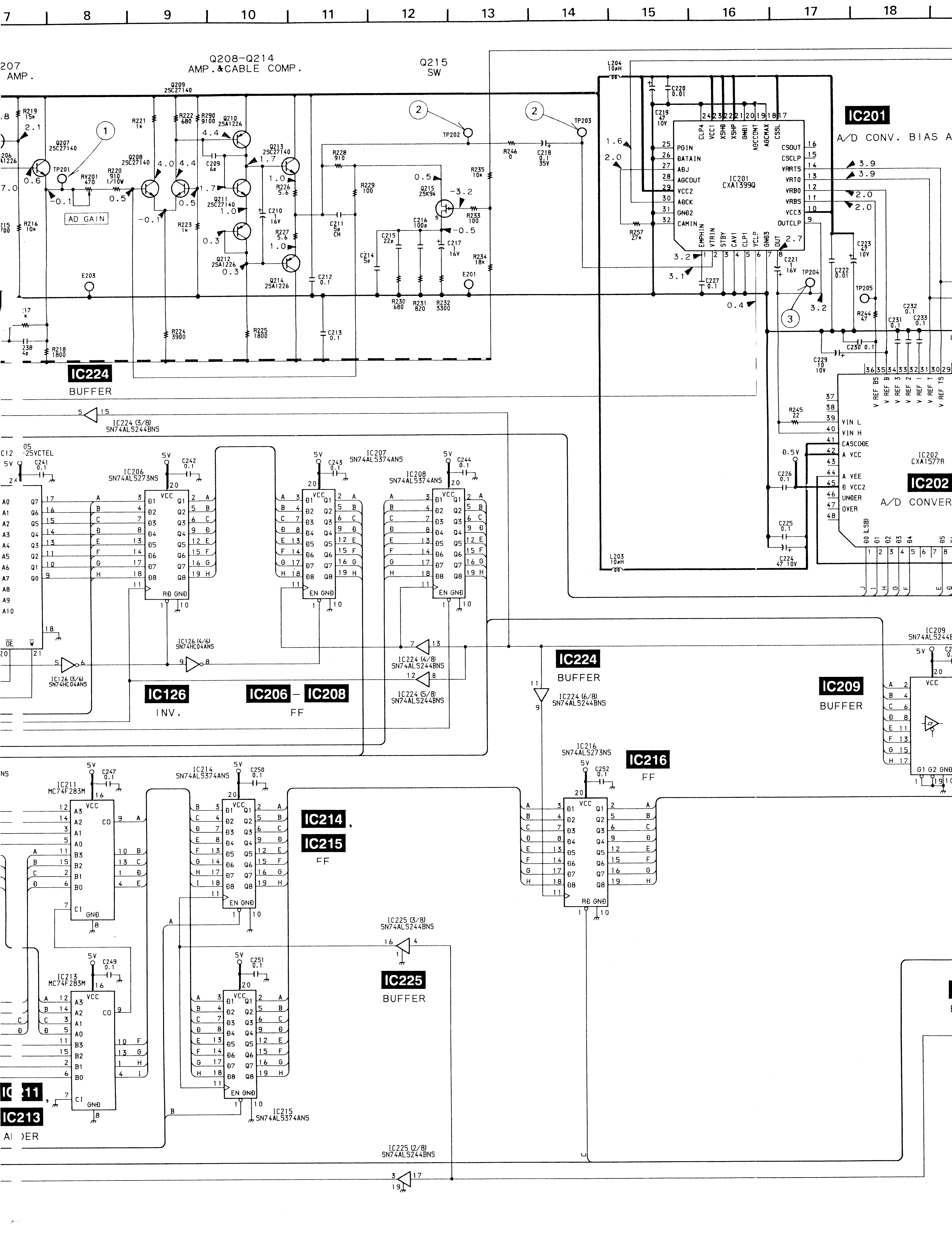
14
15
16
17
18
19
Q208–Q214
AMP.&CABLE COMP.
Q215
SW
IC201
A/D CONV. BIAS AMP CLAM
IC201
CXA1399Q
TP202
TP203
TP204
TP205
AD GAIN
RV201
IC224
BUFFER
IC224 (3/8)
SN74ALS244BNS
IC202
CXA1577R
IC202
A/D CONVERTER
IC206
SN74ALS273NS
IC207
SN74ALS374ANS
IC208
SN74ALS374ANS
IC126 (4/6)
SN74HC04ANS
IC224 (4/8)
SN74ALS244BNS
IC224 (5/8)
SN74ALS244BNS
IC224
BUFFER
IC224 (6/8)
SN74ALS244BNS
IC126
INV.
IC206 - IC208
FF
IC209
SN74ALS244BNS
IC209
BUFFER
IC211
IC214
SN74ALS374ANS
IC214,
IC215
FF
IC216
SN74ALS273NS
IC216
FF
IC213
IC225 (3/8)
SN74ALS244BNS
IC225
BUFFER
IC215
SN74ALS374ANS
IC225 (2/8)
SN74ALS244BNS
IC225
BUFFER
L204 10μH
L203 10μH

A/D,D/A

ADA


7
8
9
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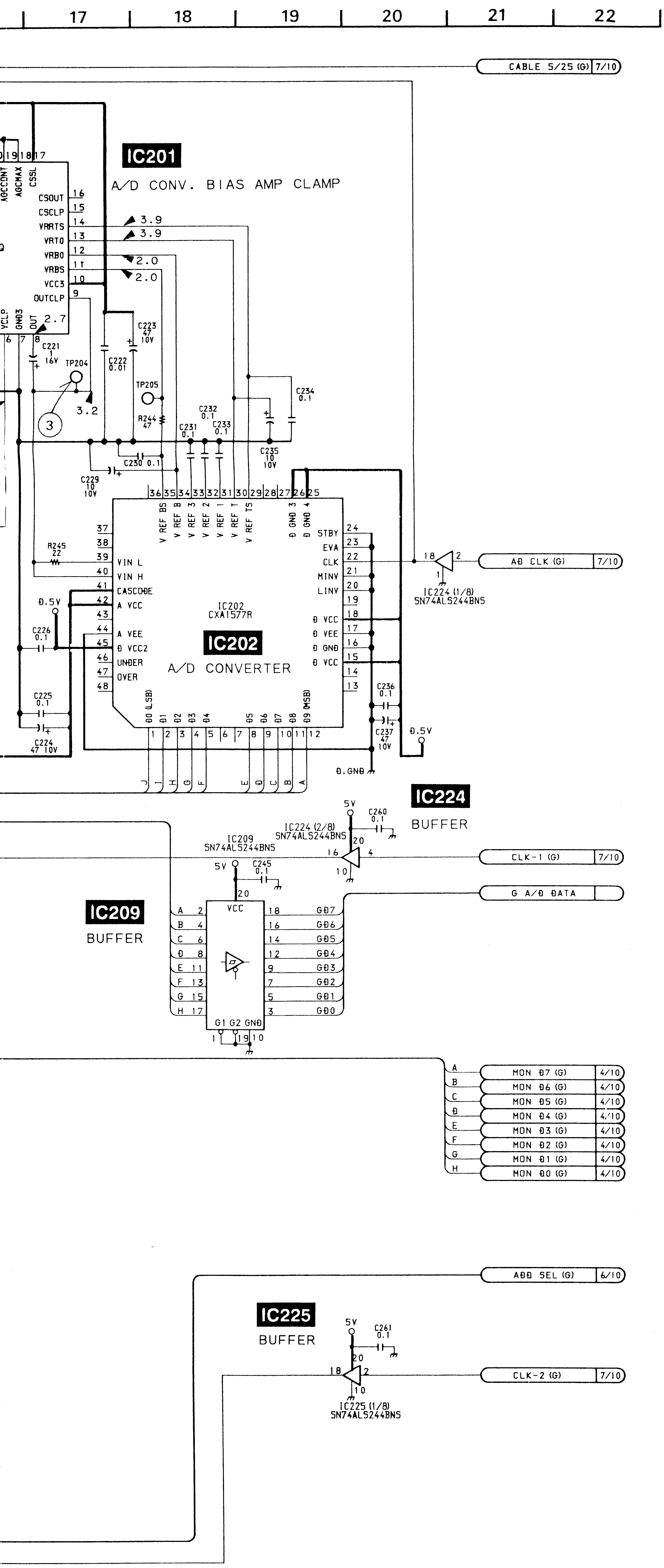
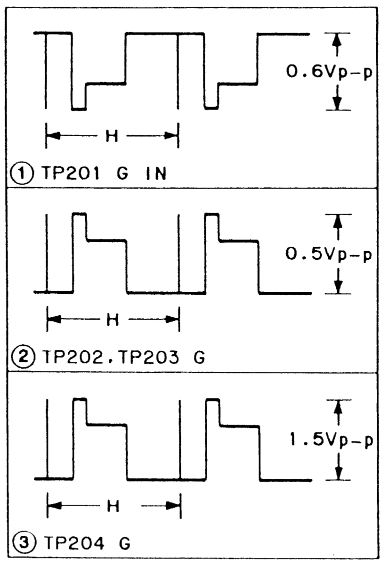
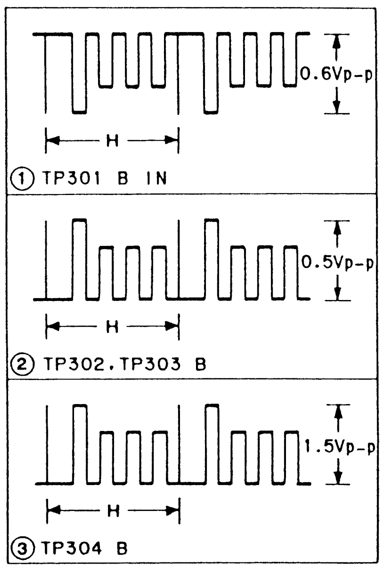
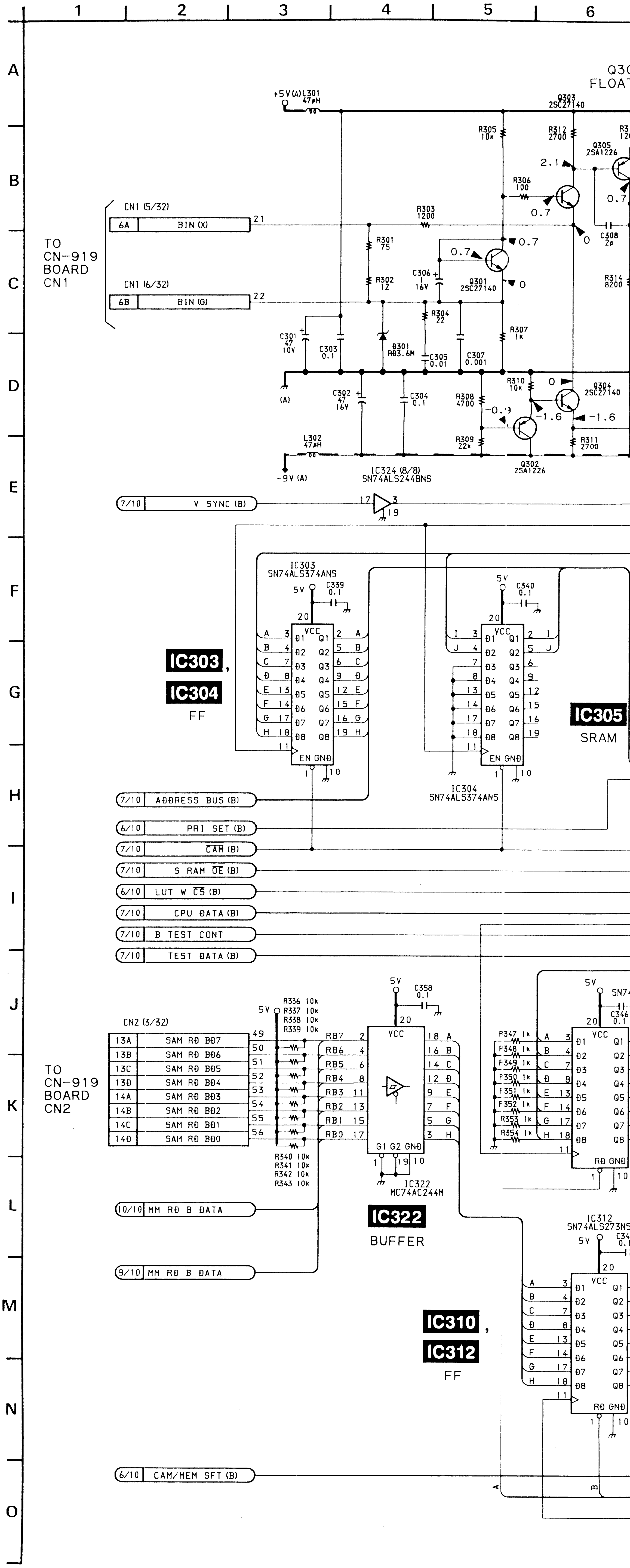
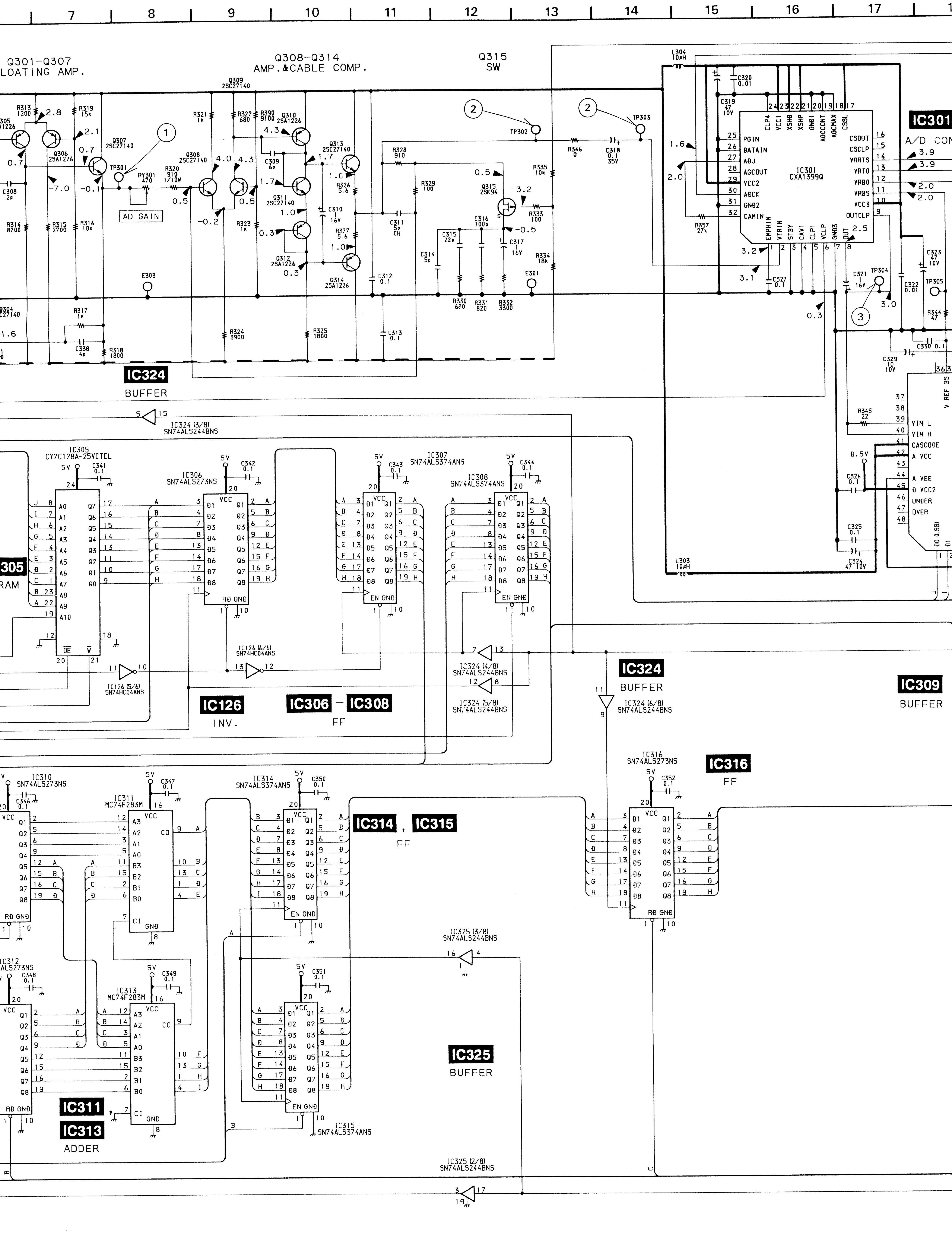
11
12
13
14
15
16
17
18
207 AMP.
Q208-Q214 AMP.&CABLE COMP.
Q215 SW
IC201
A/D CONV. BIAS A
IC201 CXA1399Q
AD GAIN
RV201 470
TP201
TP202
TP203
TP204
TP205
E201
E203
IC224
BUFFER
IC224 (3/8) SN74ALS244BNS
IC206 SN74ALS273NS
IC207 SN74ALS374ANS
IC208 SN74ALS374ANS
IC126 (4/6) SN74HC04ANS
IC126 (3/6) SN74HC04ANS
IC224 (4/8) SN74ALS244BNS
IC224 (5/8) SN74ALS244BNS
IC224 (6/8) SN74ALS244BNS
IC126
INV.
IC206 - IC208
FF
IC202
IC202 CXA1577R
A/D CONVER
IC209
IC209 SN74ALS244
BUFFER
IC216
IC216 SN74ALS273NS
FF
IC211 MC74F283M
IC213 MC74F283M
IC214 SN74ALS374ANS
IC215 SN74ALS374ANS
IC214,
IC215
FF
IC225
IC225 (3/8) SN74ALS244BNS
IC225 (2/8) SN74ALS244BNS
BUFFER
IC213
ADDER
L204 10μH
L203 10μH
5V

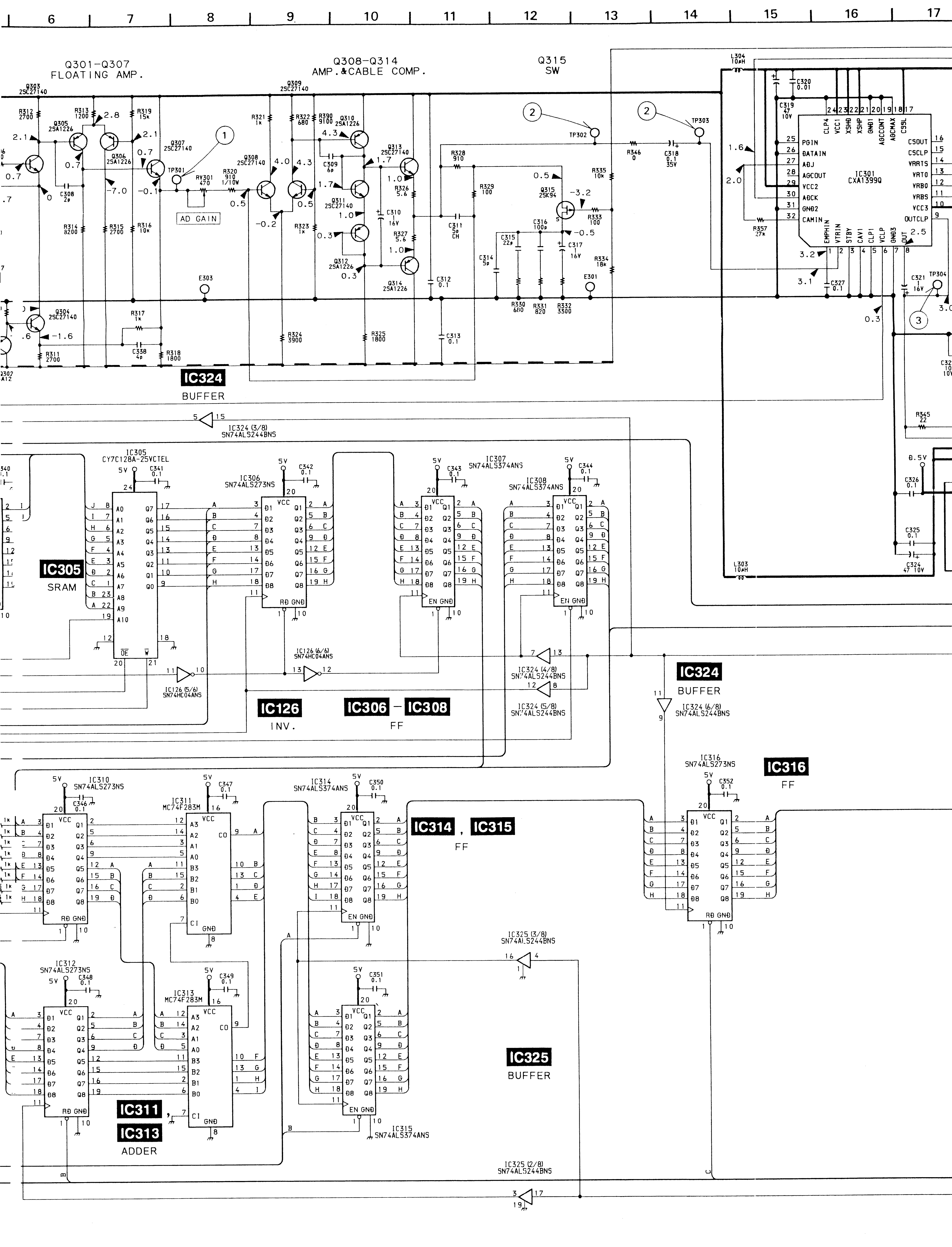

17
18
19
20
21
22
CABLE 5/25 (G) 7/10
IC201
A/D CONV. BIAS AMP CLAMP
AGCCONT
AGCMAX
CSSL
CSOUT
CSCLP
VRRTS
VRTO
VRBO
VRBS
VCC3
OUTCLP
YCLP
GND3
OUT
3.9
3.9
2.0
2.0
2.7
3.2
C221 1 16V
TP204
C222 0.01
C223 47 10V
TP205
R244 47
C231 0.1
C232 0.1
C233 0.1
C234 0.1
C235 10 10V
C230 0.1
C229 10 10V
R245 22
V REF BS
V REF B
V REF 3
V REF 2
V REF 1
V REF T
V REF TS
D GND 3
D GND 4
STBY
EVA
CLK
MINV
LINV
VIN L
VIN H
CASCODE
A VCC
A VEE
D VCC2
UNDER
OVER
D VCC
D VEE
D GND
D VCC
IC202 CXA1577R
IC202
A/D CONVERTER
D0 (LSB)
D1
D2
D3
D4
D5
D6
D7
D8
D9 (MSB)
0.5V
C226 0.1
C225 0.1
C224 47 10V
C236 0.1
C237 47 10V
D.5V
D.GND
AD CLK (G) 7/10
IC224 (1/8) SN74ALS244BNS
IC224
BUFFER
5V
C260 0.1
IC224 (2/8) SN74ALS244BNS
IC209 SN74ALS244BNS
CLK-1 (G) 7/10
5V
C245 0.1
G A/D DATA
IC209
BUFFER
VCC
GD7
GD6
GD5
GD4
GD3
GD2
GD1
GD0
G1 G2 GND
MON D7 (G) 4/10
MON D6 (G) 4/10
MON D5 (G) 4/10
MON D4 (G) 4/10
MON D3 (G) 4/10
MON D2 (G) 4/10
MON D1 (G) 4/10
MON D0 (G) 4/10
ADD SEL (G) 6/10
IC225
BUFFER
5V
C261 0.1
CLK-2 (G) 7/10
IC225 (1/8) SN74ALS244BNS

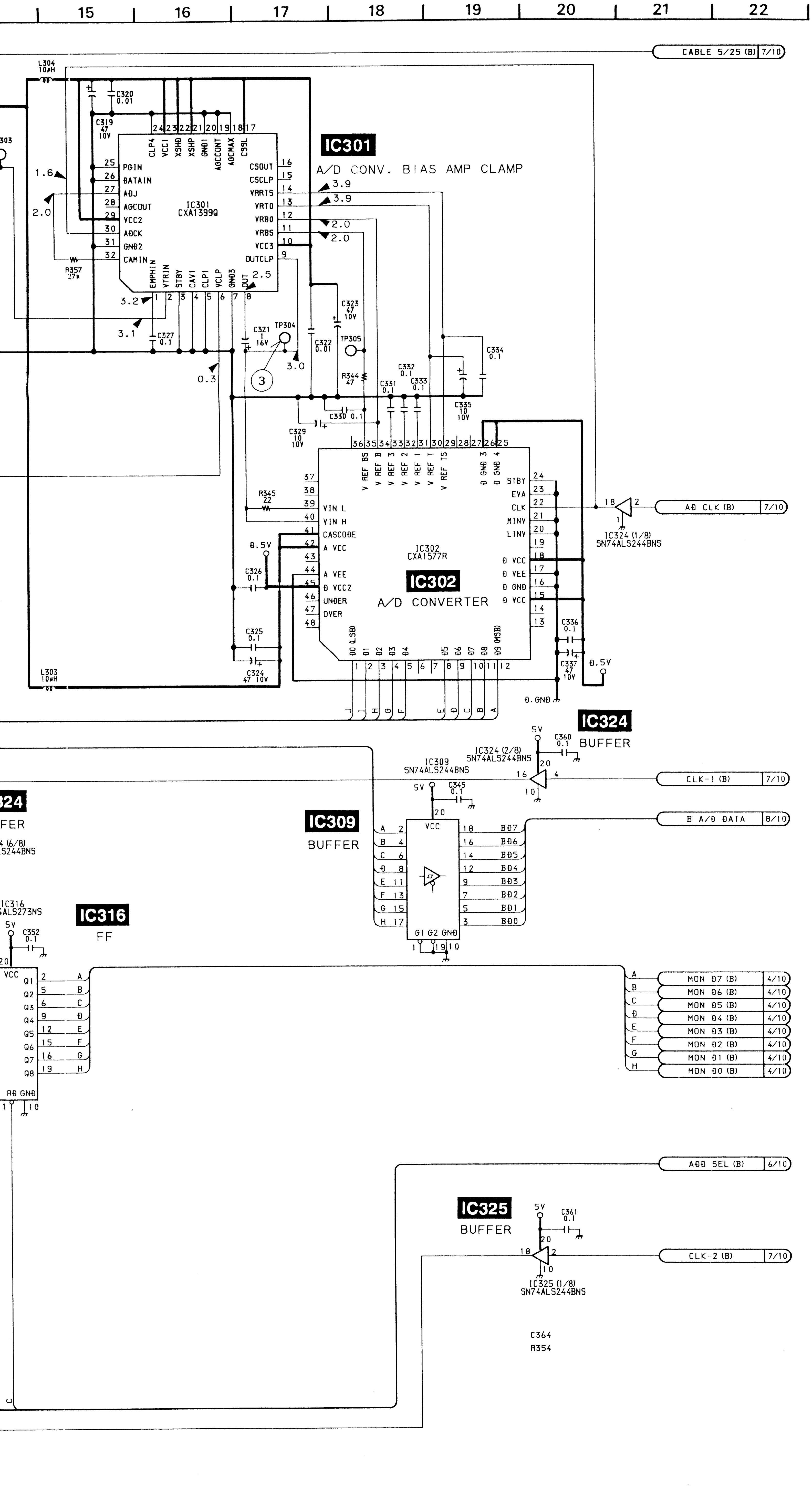

0.6Vp-p
H
① TP201 G IN
0.5Vp-p
H
② TP202.TP203 G
1.5Vp-p
H
③ TP204 G


0.6Vp-p
H
① TP301 B IN
0.5Vp-p
H
② TP302.TP303 B
1.5Vp-p
H
③ TP304 B

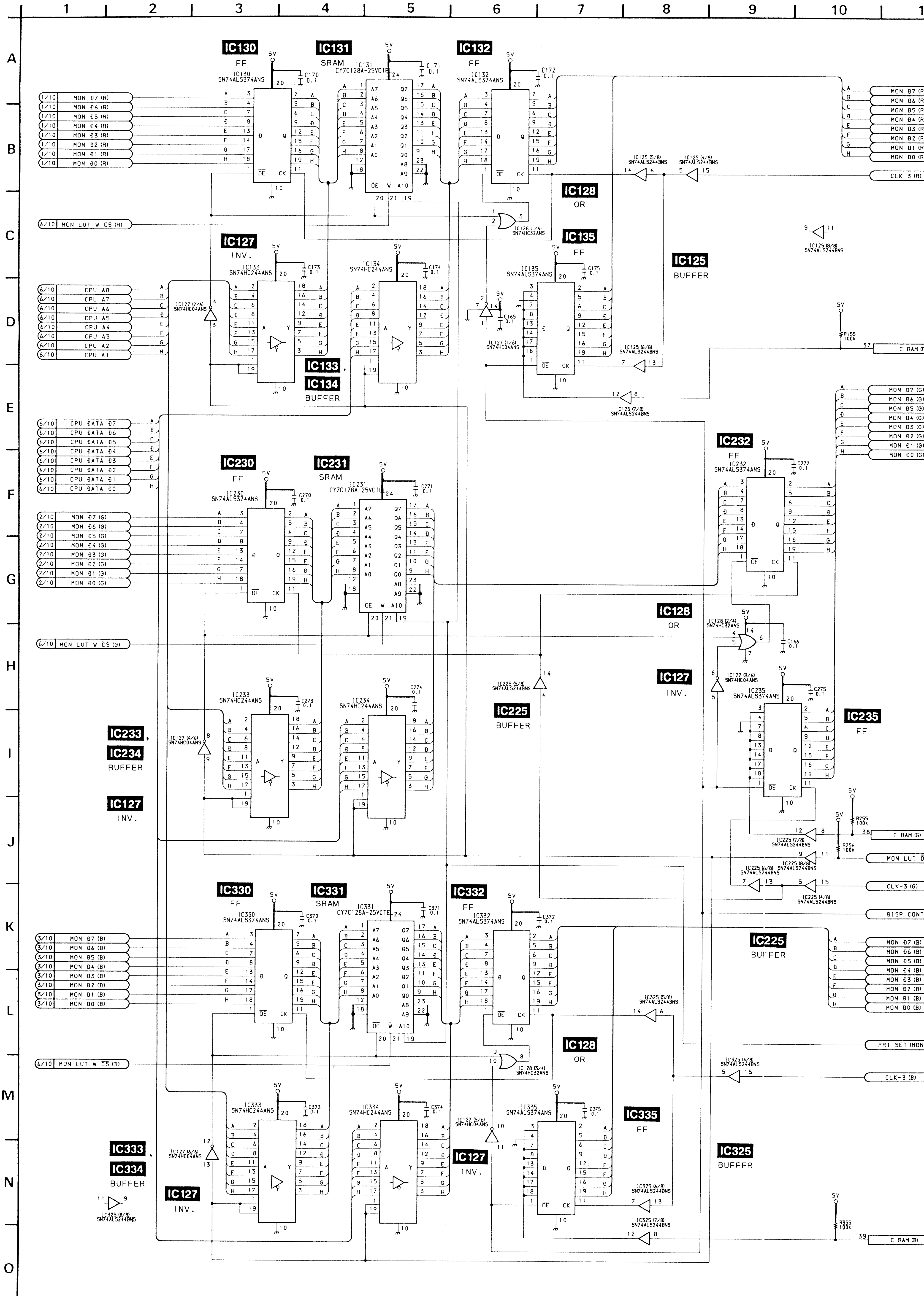

1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
+5V (A) L301 47μH
Q303 2SC2714O
Q305 2SA1226
Q301 2SC2714O
Q304 2SC2714O
Q302 2SA1226
FLOAT
TO CN-919 BOARD CN1
CN1 (5/32)
6A
BIN (X)
CN1 (6/32)
6B
BIN (G)
-9V (A)
L302 47μH
D301 RD3.6M
IC324 (8/8) SN74ALS244BNS
V SYNC (B)
IC303 SN74ALS374ANS
IC304 SN74ALS374ANS
IC303, IC304
FF
IC305
SRAM
ADDRESS BUS (B)
PRI SET (B)
CAM (B)
S RAM OE (B)
LUT W CS (B)
CPU DATA (B)
B TEST CONT
TEST DATA (B)
TO CN-919 BOARD CN2
CN2 (3/32)
SAM RD BD7
SAM RD BD6
SAM RD BD5
SAM RD BD4
SAM RD BD3
SAM RD BD2
SAM RD BD1
SAM RD BD0
IC322 MC74AC244M
IC322
BUFFER
MM RD B DATA
IC310, IC312
FF
IC312 SN74ALS273NS
CAM/MEM SFT (B)


7
8
9
10
11
12
13
14
15
16
17
Q301-Q307
LOATING AMP.
Q308-Q314
AMP.&CABLE COMP.
Q315
SW
AD GAIN
TP301
TP302
TP303
TP304
TP305
IC301
A/D CON
IC301
CXA1399Q
IC324
BUFFER
IC324 (3/8)
SN74ALS244BNS
IC305
CY7C128A-25VCTEL
305
RAM
IC306
SN74ALS273NS
IC307
SN74ALS374ANS
IC308
SN74ALS374ANS
IC126
INV.
IC126 (5/6)
SN74HC04ANS
IC126 (6/6)
SN74HC04ANS
IC306 - IC308
FF
IC324 (4/8)
SN74ALS244BNS
IC324 (5/8)
SN74ALS244BNS
IC324
BUFFER
IC324 (6/8)
SN74ALS244BNS
IC309
BUFFER
IC310
SN74ALS273NS
IC311
MC74F283M
IC314
SN74ALS374ANS
IC314 , IC315
FF
IC316
SN74ALS273NS
IC316
FF
IC312
ALS273NS
IC313
MC74F283M
IC311 , IC313
ADDER
IC325 (3/8)
SN74ALS244BNS
IC325
BUFFER
IC315
SN74ALS374ANS
IC325 (2/8)
SN74ALS244BNS
L304
10μH
L303
10μH


6
7
8
9
10
11
12
13
14
15
16
17
Q301-Q307
FLOATING AMP.
Q308-Q314
AMP.&CABLE COMP.
Q315
SW
AD GAIN
TP301
TP302
TP303
TP304
IC301
CXA1399Q
IC324
BUFFER
IC324 (3/8)
SN74ALS244BNS
IC305
CY7C128A-25VCTEL
IC305
SRAM
IC306
SN74ALS273NS
IC307
SN74ALS374ANS
IC308
SN74ALS374ANS
IC126 (5/6)
SN74HC04ANS
IC126 (6/6)
SN74HC04ANS
IC126
INV.
IC306 - IC308
FF
IC324 (4/8)
SN74ALS244BNS
IC324 (5/8)
SN74ALS244BNS
IC324 (6/8)
SN74ALS244BNS
IC324
BUFFER
IC310
SN74ALS273NS
IC311
MC74F283M
IC314
SN74ALS374ANS
IC314 , IC315
FF
IC316
SN74ALS273NS
IC316
FF
IC312
SN74ALS273NS
IC313
MC74F283M
IC311 , IC313
ADDER
IC315
SN74ALS374ANS
IC325 (3/8)
SN74ALS244BNS
IC325
BUFFER
IC325 (2/8)
SN74ALS244BNS
L304 10μH
L303 10μH


15
16
17
18
19
20
21
22
CABLE 5/25 (B) 7/10
L304 10µH
C320 0.01
C319 47 10V
IC301
A/D CONV. BIAS AMP CLAMP
IC301 CXA1399Q
CLP4
VCC1
XSHO
XSHP
GND1
AGCCONT
AGCMAX
C99L
PGIN
DATAIN
ADJ
AGCOUT
VCC2
ADCK
GND2
CAMIN
CSOUT
CSCLP
VRRTS
VRTO
VRBO
VRBS
VCC3
OUTCLP
EMPHIN
VTRIN
STBY
CAV1
CLP1
VCLP
GND3
OUT
1.6
2.0
3.9
3.9
2.0
2.0
2.5
3.2
3.1
3.0
0.3
R357 27k
C327 0.1
C321 1 16V
TP304
C322 0.01
C323 47 10V
TP305
R344 47
C331 0.1
C332 0.1
C333 0.1
C334 0.1
C335 10 10V
C330 0.1
C329 10 10V
③
IC302 CXA1577R
IC302
A/D CONVERTER
V REF BS
V REF B
V REF 3
V REF 2
V REF 1
V REF T
V REF TS
D GND 3
D GND 4
STBY
EVA
CLK
MINV
LINV
D VCC
D VEE
D GND
D VCC
VIN L
VIN H
CASCODE
A VCC
A VEE
D VCC2
UNDER
OVER
D0 (LSB)
D1
D2
D3
D4
D5
D6
D7
D8
D9 (MSB)
R345 22
D.5V
C326 0.1
C325 0.1
C324 47 10V
L303 10µH
C336 0.1
C337 47 10V
D.5V
D.GND
AD CLK (B) 7/10
IC324 (1/8) SN74ALS244BNS
IC324
BUFFER
5V
C360 0.1
IC324 (2/8) SN74ALS244BNS
CLK-1 (B) 7/10
IC309 SN74ALS244BNS
5V
C345 0.1
IC309
BUFFER
VCC
G1 G2 GND
BD7
BD6
BD5
BD4
BD3
BD2
BD1
BD0
B A/D DATA 8/10
IC316
FF
IC316 ALS273NS
5V
C352 0.1
VCC
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
RD GND
324
FER
(6/8) S244BNS
MON D7 (B) 4/10
MON D6 (B) 4/10
MON D5 (B) 4/10
MON D4 (B) 4/10
MON D3 (B) 4/10
MON D2 (B) 4/10
MON D1 (B) 4/10
MON D0 (B) 4/10
ADD SEL (B) 6/10
IC325
BUFFER
5V
C361 0.1
CLK-2 (B) 7/10
IC325 (1/8) SN74ALS244BNS
C364
R354

ADA-33 — 4/10 — (A/D, D/A)

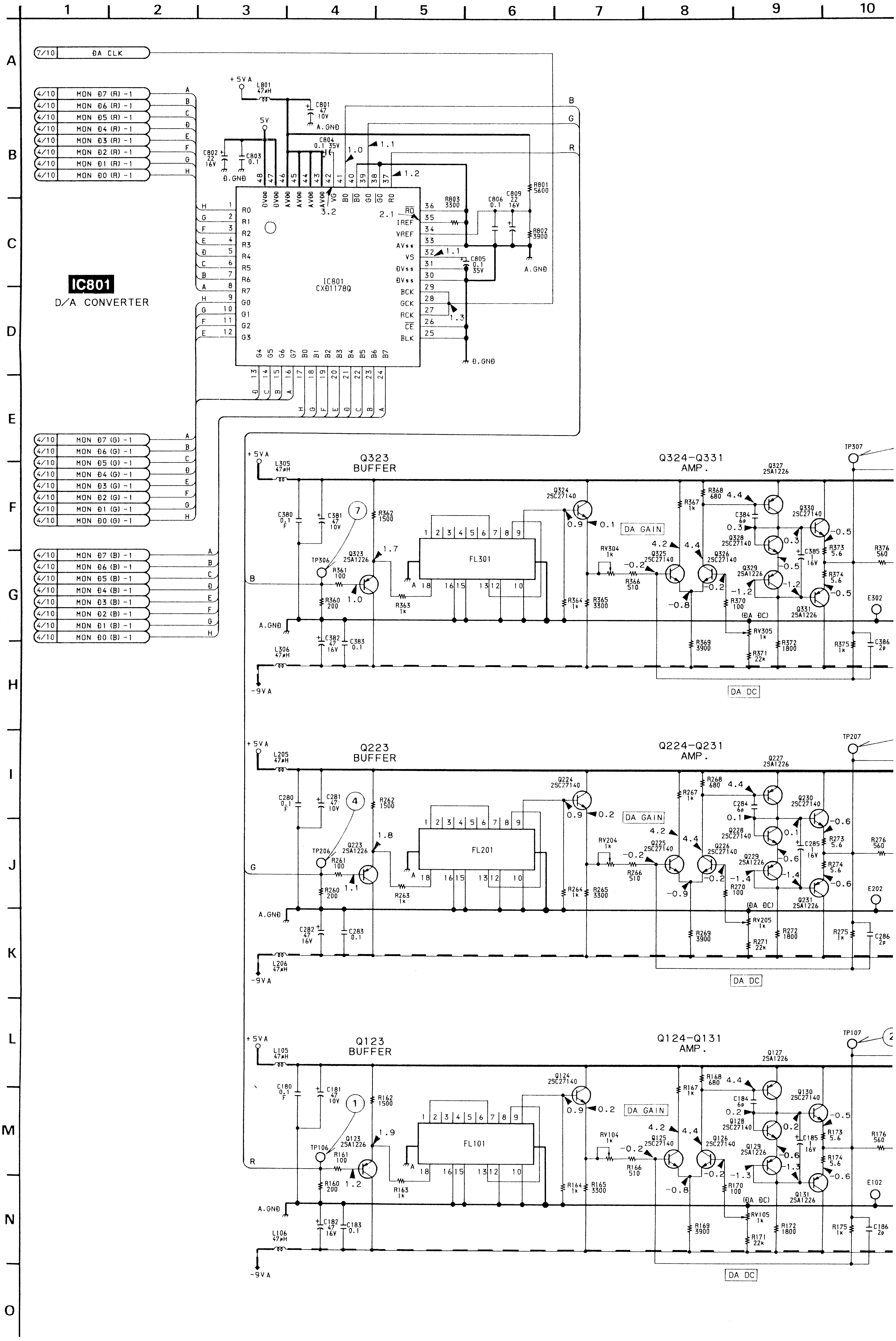

IC130
FF
IC130 SN74ALS374ANS
IC131
SRAM
IC131 CY7C128A-25VCTE
IC132
FF
IC132 SN74ALS374ANS
MON D7 (R)
MON D6 (R)
MON D5 (R)
MON D4 (R)
MON D3 (R)
MON D2 (R)
MON D1 (R)
MON D0 (R)
CLK-3 (R)
IC128
OR
MON LUT W CS (R)
IC128 (1/4) SN74HC32ANS
IC135
FF
IC135 SN74ALS374ANS
IC125
BUFFER
IC125 (5/8) SN74ALS244BNS
IC125 (4/8) SN74ALS244BNS
IC125 (8/8) SN74ALS244BNS
IC127
INV.
IC133 SN74HC244ANS
IC134 SN74HC244ANS
CPU A8
CPU A7
CPU A6
CPU A5
CPU A4
CPU A3
CPU A2
CPU A1
IC127 (2/6) SN74HC04ANS
IC127 (1/6) SN74HC04ANS
IC133,
IC134
BUFFER
R155 100k
C RAM (R)
IC125 (6/8) SN74ALS244BNS
IC125 (7/8) SN74ALS244BNS
CPU DATA D7
CPU DATA D6
CPU DATA D5
CPU DATA D4
CPU DATA D3
CPU DATA D2
CPU DATA D1
CPU DATA D0
MON D7 (G)
MON D6 (G)
MON D5 (G)
MON D4 (G)
MON D3 (G)
MON D2 (G)
MON D1 (G)
MON D0 (G)
IC232
FF
IC232 SN74ALS374ANS
IC230
FF
IC230 SN74ALS374ANS
IC231
SRAM
IC231 CY7C128A-25VCTE
MON LUT W CS (G)
IC128
OR
IC128 (2/4) SN74HC32ANS
IC127
INV.
IC127 (3/6) SN74HC04ANS
IC225 (5/8) SN74ALS244BNS
IC225
BUFFER
IC235 SN74ALS374ANS
IC235
FF
IC233 SN74HC244ANS
IC234 SN74HC244ANS
IC127 (4/6) SN74HC04ANS
IC233,
IC234
BUFFER
IC127
INV.
R255 100k
R256 100k
C RAM (G)
MON LUT
IC225 (7/8) SN74ALS244BNS
IC225 (6/8) SN74ALS244BNS
IC225 (8/8) SN74ALS244BNS
IC225 (4/8) SN74ALS244BNS
CLK-3 (G)
DISP CONT
IC330
FF
IC330 SN74ALS374ANS
IC331
SRAM
IC331 CY7C128A-25VCTE
IC332
FF
IC332 SN74ALS374ANS
MON D7 (B)
MON D6 (B)
MON D5 (B)
MON D4 (B)
MON D3 (B)
MON D2 (B)
MON D1 (B)
MON D0 (B)
IC225
BUFFER
IC325 (5/8) SN74ALS244BNS
PRI SET (MON
MON LUT W CS (B)
IC128
OR
IC128 (3/4) SN74HC32ANS
IC325 (4/8) SN74ALS244BNS
CLK-3 (B)
IC333 SN74HC244ANS
IC334 SN74HC244ANS
IC335 SN74ALS374ANS
IC335
FF
IC127 (5/6) SN74HC04ANS
IC127 (6/6) SN74HC04ANS
IC333,
IC334
BUFFER
IC127
INV.
IC127
INV.
IC325
BUFFER
IC325 (6/8) SN74ALS244BNS
IC325 (7/8) SN74ALS244BNS
IC325 (8/8) SN74ALS244BNS
R355 100k
C RAM (B)

A/D,D/A A/D,D/A

ADA-33 ADA-33

MON D7 (R) -1 5/10
MON D6 (R) -1 5/10
MON D5 (R) -1 5/10
MON D4 (R) -1 5/10
MON D3 (R) -1 5/10
MON D2 (R) -1 5/10
MON D1 (R) -1 5/10
MON D0 (R) -1 5/10
CLK-3 (R) 7/10
TO CN-919 BOARD CN1
CN1 (7/32)
C RAM (R) 10A
MON D7 (G) -1 5/10
MON D0 (G) -1 5/10
IC235
FF
TO CN-919 BOARD CN1
CN1 (8/32)
C RAM (G) 10B
MON LUT OE 6/10
CLK-3 (G) 7/10
DISP CONT (2) 6/10
MON D7 (B) -1 5/10
MON D0 (B) -1 5/10
PRI SET (MON) 6/10
CLK-3 (B) 7/10
TO CN-919 BOARD CN1
CN1 (9/32)
C RAM (B) 10C

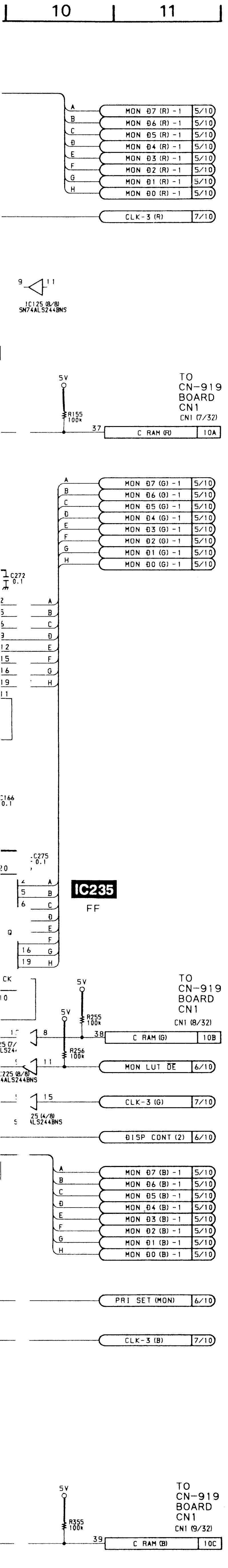
ADA-33 — 5/10 — (A/D, D/A)

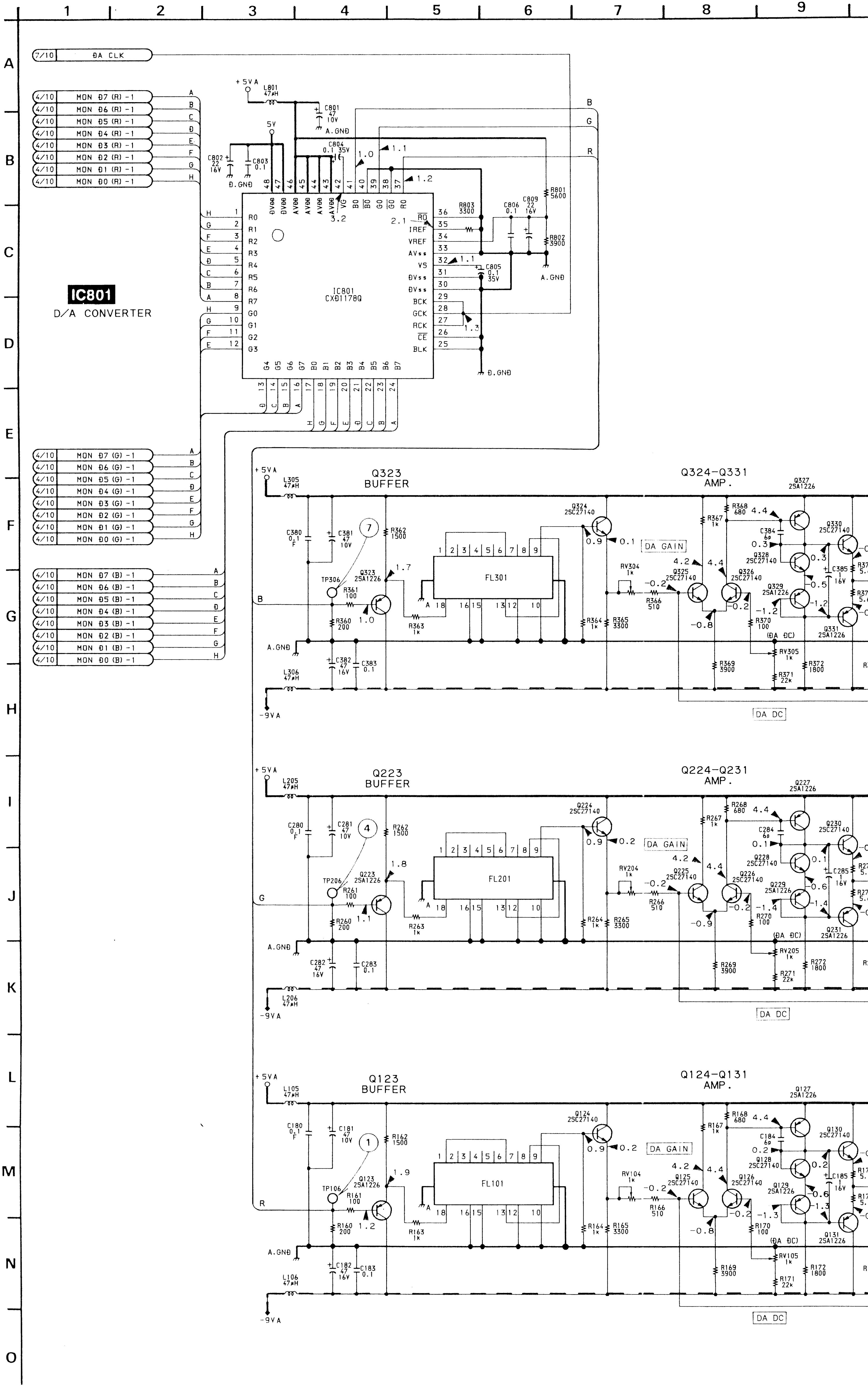


DA CLK 7/10
MON D7 (R) -1 4/10
MON D6 (R) -1 4/10
MON D5 (R) -1 4/10
MON D4 (R) -1 4/10
MON D3 (R) -1 4/10
MON D2 (R) -1 4/10
MON D1 (R) -1 4/10
MON D0 (R) -1 4/10
IC801
D/A CONVERTER
IC801 CXD1178Q
+5VA
L801 47µH
C801 47 10V
A.GND
C804 0.1 35V
C802 22 16V
C803 0.1
D.GND
R803 3300
C806 0.1
C809 22 16V
R801 5600
R802 3900
C805 0.1 35V
IREF
VREF
AVss
VS
DVss
BCK
GCK
RCK
CE
BLK
MON D7 (G) -1 4/10
MON D0 (G) -1 4/10
MON D7 (B) -1 4/10
MON D0 (B) -1 4/10
Q323 BUFFER
Q324-Q331 AMP.
L305 47µH
C380 0.1 F
C381 47 10V
R362 1500
TP306
Q323 2SA1226
R361 100
R360 200
R363 1k
FL301
Q324 2SC2714O
DA GAIN
RV304 1k
R366 510
R364 1k
R365 3300
Q325 2SC2714O
Q326 2SC2714O
R367 1k
R368 680
C384 6p
Q327 2SA1226
Q328 2SC2714O
Q329 2SA1226
Q330 2SC2714O
Q331 2SA1226
C385 1 16V
R373 5.6
R374 5.6
R370 100
(DA DC)
RV305 1k
R369 3900
R371 22k
R372 1800
R375 1k
C386 2p
R376 560
TP307
E302
C382 47 16V
C383 0.1
L306 47µH
-9VA
DA DC
Q223 BUFFER
Q224-Q231 AMP.
L205 47µH
TP206
Q223 2SA1226
FL201
TP207
E202
L206 47µH
Q123 BUFFER
Q124-Q131 AMP.
L105 47µH
TP106
Q123 2SA1226
FL101
TP107
E102
L106 47µH

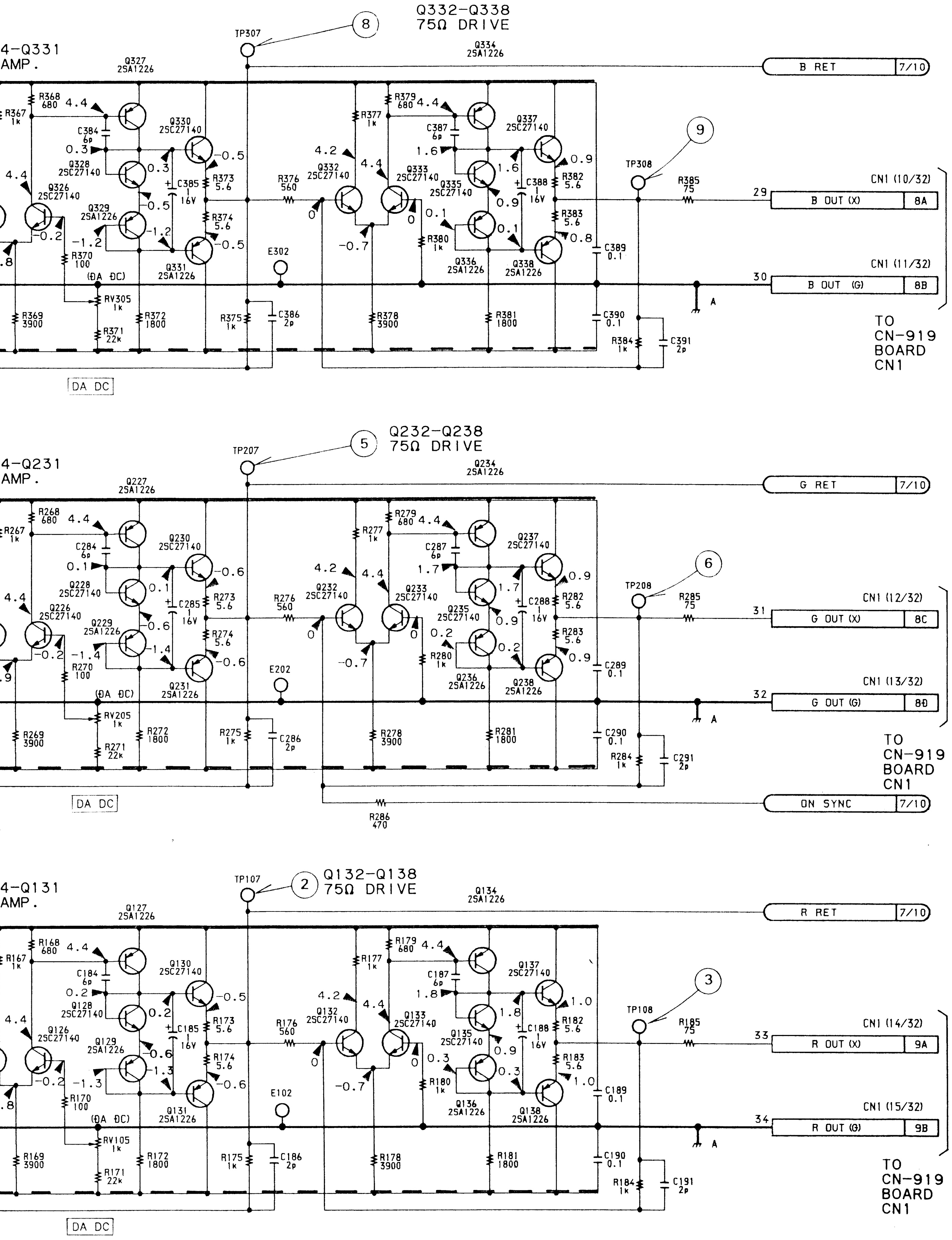
A/D,D/A

ADA

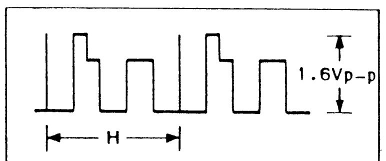

10
11
MON D7 (R) -1 5/10
MON D6 (R) -1 5/10
MON D5 (R) -1 5/10
MON D4 (R) -1 5/10
MON D3 (R) -1 5/10
MON D2 (R) -1 5/10
MON D1 (R) -1 5/10
MON D0 (R) -1 5/10
CLK-3 (R) 7/10
IC125 (8/8) SN74ALS244BNS
TO CN-919 BOARD CN1 CN1 (7/32)
R155 100k
C RAM (R) 10A
MON D7 (G) -1 5/10
MON D6 (G) -1 5/10
MON D5 (G) -1 5/10
MON D4 (G) -1 5/10
MON D3 (G) -1 5/10
MON D2 (G) -1 5/10
MON D1 (G) -1 5/10
MON D0 (G) -1 5/10
C272 0.1
C166 0.1
C275 0.1
IC235
FF
TO CN-919 BOARD CN1 CN1 (8/32)
R255 100k
R256 100k
C RAM (G) 10B
MON LUT OE 6/10
CLK-3 (G) 7/10
DISP CONT (2) 6/10
MON D7 (B) -1 5/10
MON D6 (B) -1 5/10
MON D5 (B) -1 5/10
MON D4 (B) -1 5/10
MON D3 (B) -1 5/10
MON D2 (B) -1 5/10
MON D1 (B) -1 5/10
MON D0 (B) -1 5/10
PRI SET (MON) 6/10
CLK-3 (B) 7/10
TO CN-919 BOARD CN1 CN1 (9/32)
R355 100k
C RAM (B) 10C


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
7/10 DA CLK
4/10 MON D7 (R) -1
4/10 MON D6 (R) -1
4/10 MON D5 (R) -1
4/10 MON D4 (R) -1
4/10 MON D3 (R) -1
4/10 MON D2 (R) -1
4/10 MON D1 (R) -1
4/10 MON D0 (R) -1
IC801
D/A CONVERTER
IC801 CXD1178Q
+5VA
L801 47µH
C801 47 10V
A.GND
C802 22 16V
C803 0.1
D.GND
C804 0.1 35V
R803 3300
C806 0.1
C809 22 16V
R801 5600
R802 3900
C805 0.1 35V
IREF
VREF
AVss
VS
DVss
BCK
GCK
RCK
CE
BLK
4/10 MON D7 (G) -1
4/10 MON D6 (G) -1
4/10 MON D5 (G) -1
4/10 MON D4 (G) -1
4/10 MON D3 (G) -1
4/10 MON D2 (G) -1
4/10 MON D1 (G) -1
4/10 MON D0 (G) -1
4/10 MON D7 (B) -1
4/10 MON D6 (B) -1
4/10 MON D5 (B) -1
4/10 MON D4 (B) -1
4/10 MON D3 (B) -1
4/10 MON D2 (B) -1
4/10 MON D1 (B) -1
4/10 MON D0 (B) -1
Q323 BUFFER
Q324-Q331 AMP.
FL301
DA GAIN
DA DC
Q223 BUFFER
Q224-Q231 AMP.
FL201
Q123 BUFFER
Q124-Q131 AMP.
FL101
-9VA

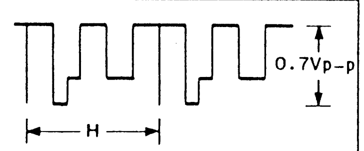
8 | 9 | 10 | 11 | 12 | 13 | 14 | 15



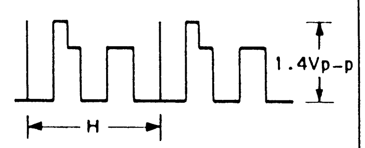
4-Q331
AMP.
TP307
⑧
Q332-Q338
75Ω DRIVE
Q334 2SA1226
B RET
7/10
Q327 2SA1226
R368 680
R367 1k
C384 6p
Q330 2SC27140
Q328 2SC27140
Q326 2SC27140
Q329 2SA1226
R373 5.6
C385 1 16V
R374 5.6
R370 100
(DA DC)
Q331 2SA1226
RV305 1k
R369 3900
R371 22k
R372 1800
R375 1k
C386 2p
E302
R376 560
Q332 2SC27140
R377 1k
R379 680
C387 6p
Q333 2SC27140
Q335 2SC27140
Q337 2SC27140
C388 1 16V
R382 5.6
R383 5.6
R380 1k
Q336 2SA1226
Q338 2SA1226
C389 0.1
R378 3900
R381 1800
C390 0.1
R384 1k
C391 2p
⑨
TP308
R385 75
CN1 (10/32)
29
B OUT (X)
8A
CN1 (11/32)
30
B OUT (G)
8B
A
TO CN-919 BOARD CN1
DA DC
4-Q231
AMP.
TP207
⑤
Q232-Q238
75Ω DRIVE
Q234 2SA1226
G RET
7/10
Q227 2SA1226
R268 680
R267 1k
C284 6p
Q230 2SC27140
Q228 2SC27140
Q226 2SC27140
Q229 2SA1226
R273 5.6
C285 1 16V
R274 5.6
R270 100
(DA DC)
Q231 2SA1226
RV205 1k
R269 3900
R271 22k
R272 1800
R275 1k
C286 2p
E202
R276 560
Q232 2SC27140
R277 1k
R279 680
C287 6p
Q233 2SC27140
Q235 2SC27140
Q237 2SC27140
C288 1 16V
R282 5.6
R283 5.6
R280 1k
Q236 2SA1226
Q238 2SA1226
C289 0.1
R278 3900
R281 1800
C290 0.1
R284 1k
C291 2p
⑥
TP208
R285 75
CN1 (12/32)
31
G OUT (X)
8C
CN1 (13/32)
32
G OUT (G)
8D
A
TO CN-919 BOARD CN1
DA DC
R286 470
ON SYNC
7/10
4-Q131
AMP.
TP107
②
Q132-Q138
75Ω DRIVE
Q134 2SA1226
R RET
7/10
Q127 2SA1226
R168 680
R167 1k
C184 6p
Q130 2SC27140
Q128 2SC27140
Q126 2SC27140
Q129 2SA1226
R173 5.6
C185 1 16V
R174 5.6
R170 100
(DA DC)
Q131 2SA1226
RV105 1k
R169 3900
R171 22k
R172 1800
R175 1k
C186 2p
E102
R176 560
Q132 2SC27140
R177 1k
R179 680
C187 6p
Q133 2SC27140
Q135 2SC27140
Q137 2SC27140
C188 1 16V
R182 5.6
R183 5.6
R180 1k
Q136 2SA1226
Q138 2SA1226
C189 0.1
R178 3900
R181 1800
C190 0.1
R184 1k
C191 2p
③
TP108
R185 75
CN1 (14/32)
33
R OUT (X)
9A
CN1 (15/32)
34
R OUT (G)
9B
A
TO CN-919 BOARD CN1
DA DC
4.4
0.3
4.4
-0.2
-1.2
-0.5
-1.2
-0.5
4.2
4.4
1.6
1.6
0.9
0.9
0.1
0.1
0.8
-0.7
0
0
0.1
-0.6
-1.4
-0.6
1.7
0.2
0.2
1.8
0.3
0.3
1.0
-1.3



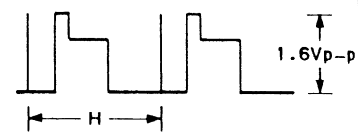
① TP106 R



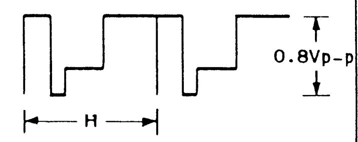
② TP107 R RET



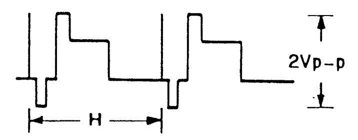
③ TP108 R OUT



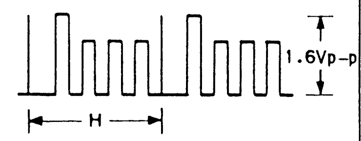
④ TP206 G



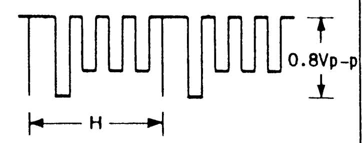
⑤ TP207 G RET



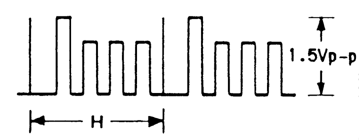
⑥ TP208 G OUT



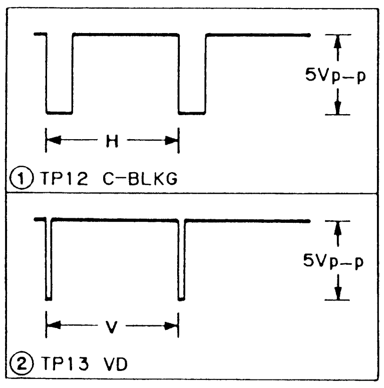
⑦ TP306 B



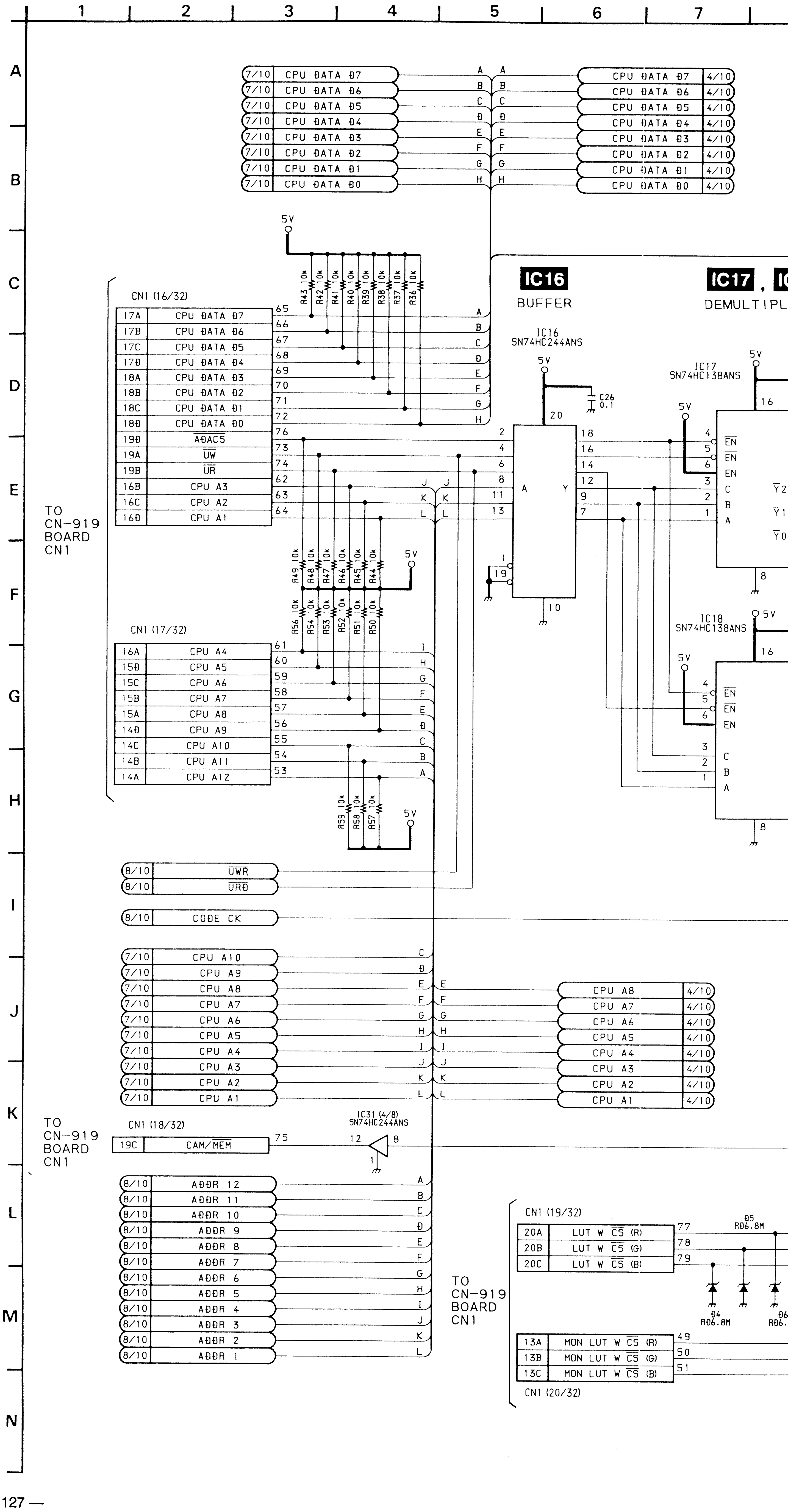
⑧ TP307 B RET

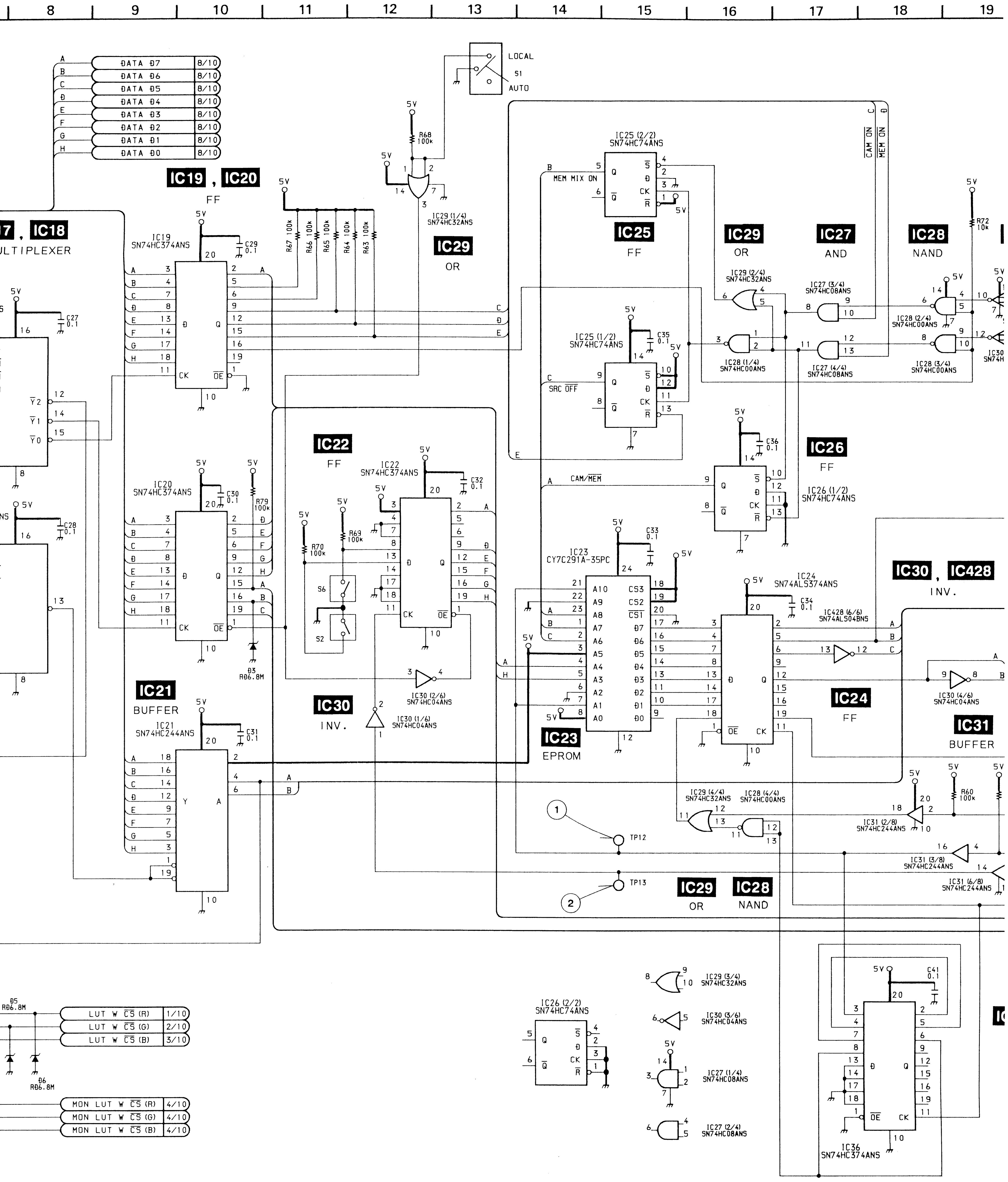


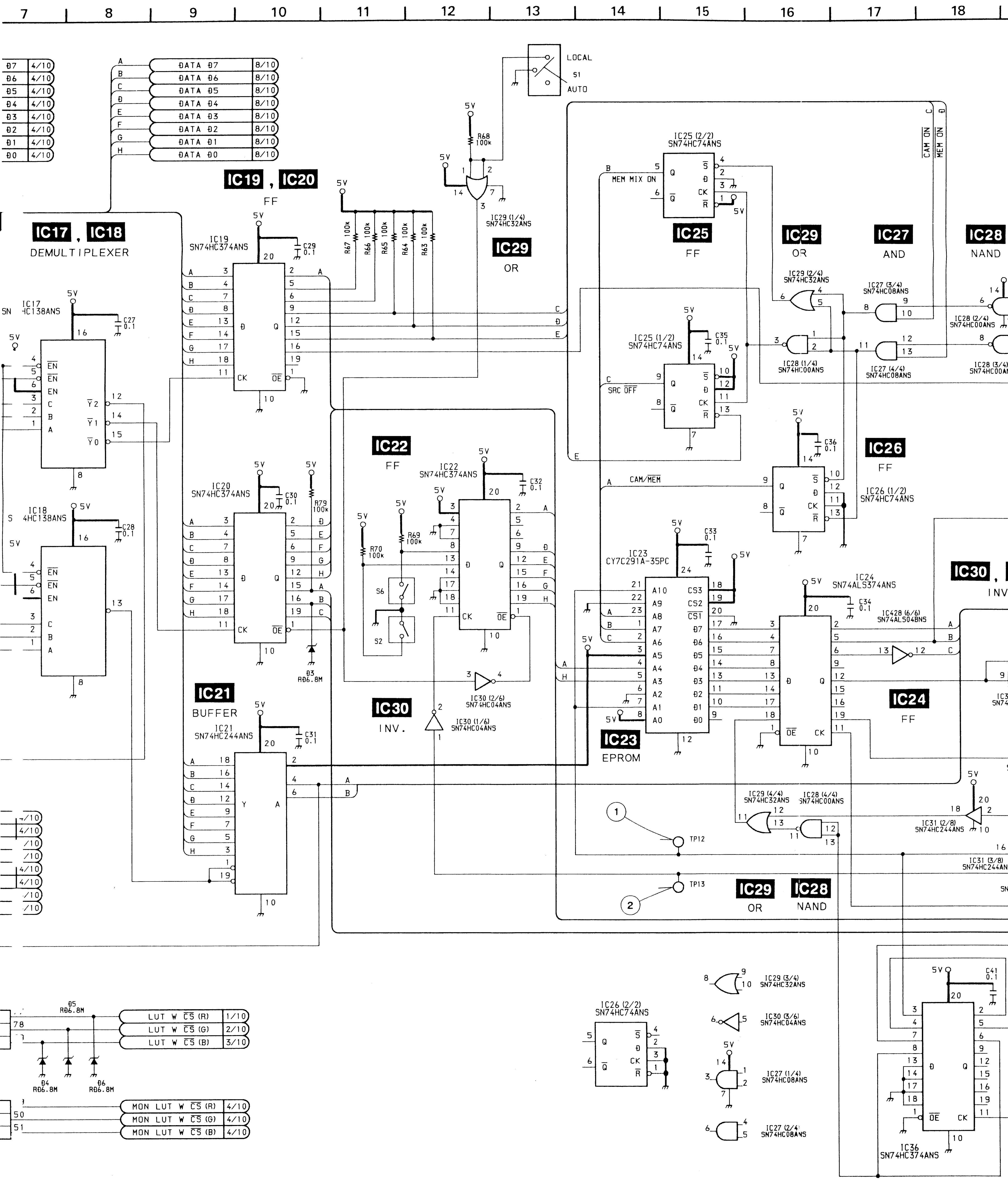
⑨ TP308 B OUT

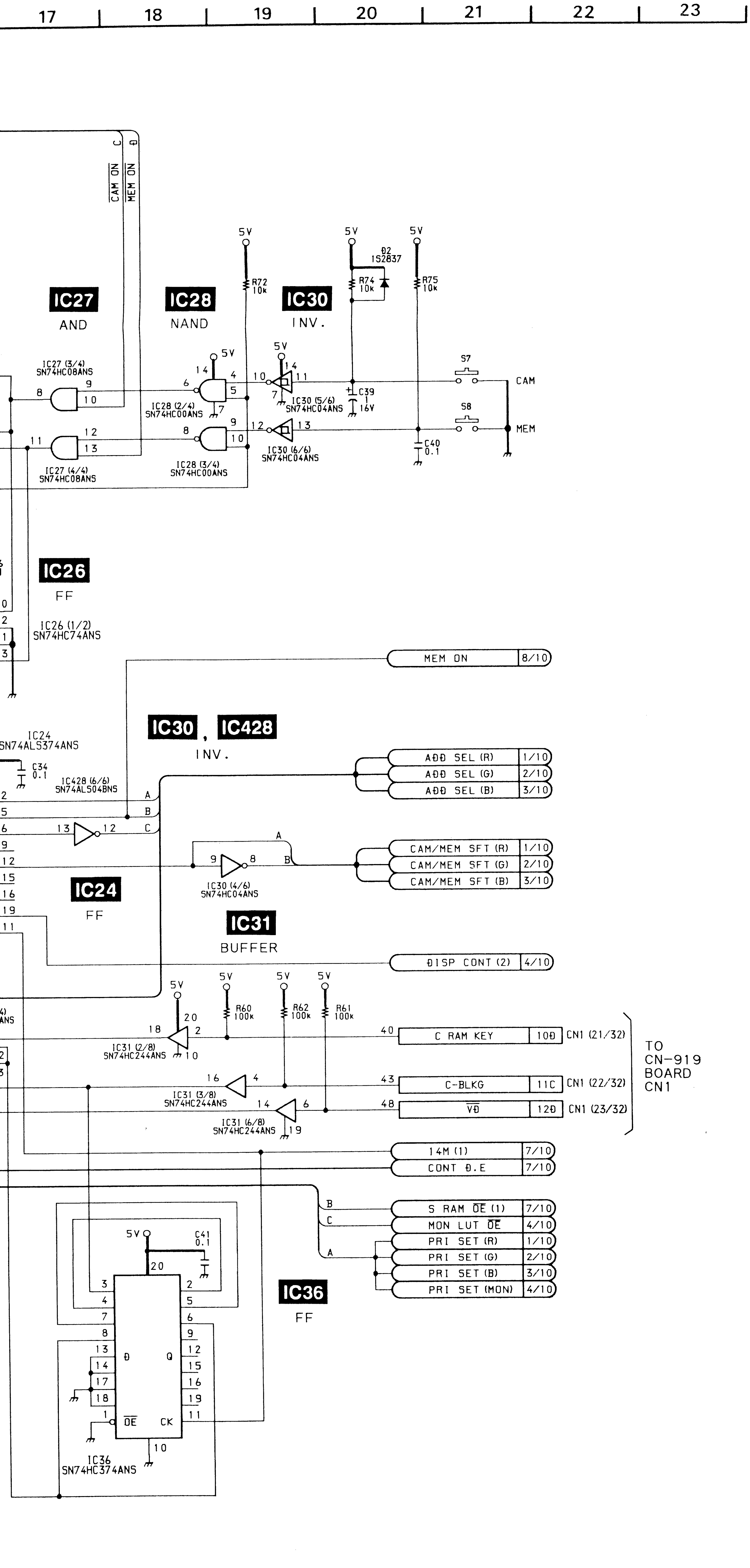

5Vp-p
H
① TP12 C-BLKG
5Vp-p
V
② TP13 VD

ADA-33 — 6/10 — (A/D, D/A)

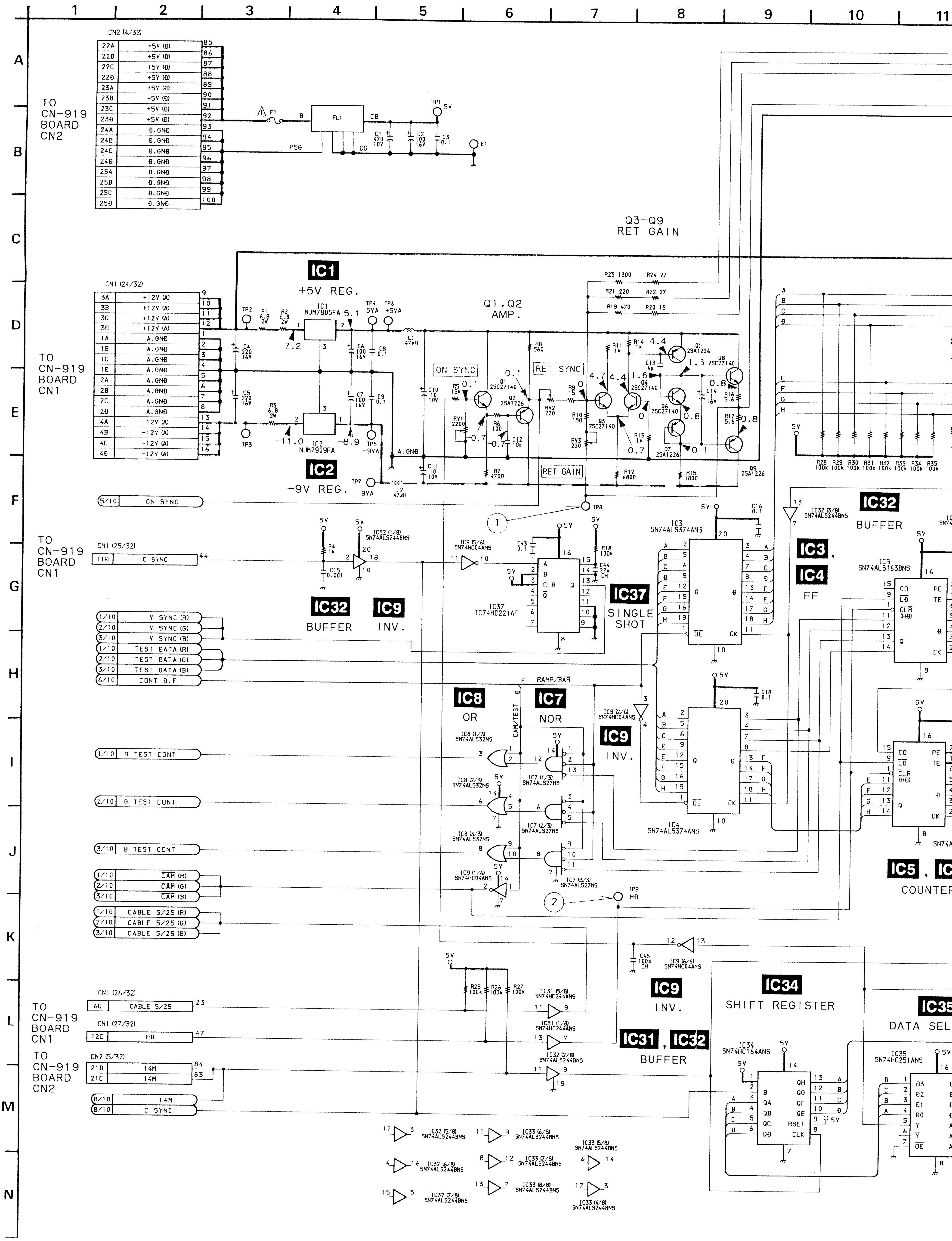

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
K
L
M
N
7/10 CPU DATA D7
7/10 CPU DATA D6
7/10 CPU DATA D5
7/10 CPU DATA D4
7/10 CPU DATA D3
7/10 CPU DATA D2
7/10 CPU DATA D1
7/10 CPU DATA D0
CPU DATA D7 4/10
CPU DATA D6 4/10
CPU DATA D5 4/10
CPU DATA D4 4/10
CPU DATA D3 4/10
CPU DATA D2 4/10
CPU DATA D1 4/10
CPU DATA D0 4/10
5V
R43 10k
R42 10k
R41 10k
R40 10k
R39 10k
R38 10k
R37 10k
R36 10k
IC16
BUFFER
IC17, IC
DEMULTIPL
CN1 (16/32)
17A CPU DATA D7 65
17B CPU DATA D6 66
17C CPU DATA D5 67
17D CPU DATA D4 68
18A CPU DATA D3 69
18B CPU DATA D2 70
18C CPU DATA D1 71
18D CPU DATA D0 72
19D ADACS 76
19A UW 73
19B UR 74
16B CPU A3 62
16C CPU A2 63
16D CPU A1 64
TO CN-919 BOARD CN1
IC16 SN74HC244ANS
C26 0.1
IC17 SN74HC138ANS
IC18 SN74HC138ANS
A
Y
EN
C
B
Y2
Y1
Y0
R49 10k
R48 10k
R47 10k
R46 10k
R45 10k
R44 10k
R56 10k
R54 10k
R53 10k
R52 10k
R51 10k
R50 10k
CN1 (17/32)
16A CPU A4 61
15D CPU A5 60
15C CPU A6 59
15B CPU A7 58
15A CPU A8 57
14D CPU A9 56
14C CPU A10 55
14B CPU A11 54
14A CPU A12 53
R59 10k
R58 10k
R57 10k
8/10 UWR
8/10 URD
8/10 CODE CK
7/10 CPU A10
7/10 CPU A9
7/10 CPU A8
7/10 CPU A7
7/10 CPU A6
7/10 CPU A5
7/10 CPU A4
7/10 CPU A3
7/10 CPU A2
7/10 CPU A1
CPU A8 4/10
CPU A7 4/10
CPU A6 4/10
CPU A5 4/10
CPU A4 4/10
CPU A3 4/10
CPU A2 4/10
CPU A1 4/10
CN1 (18/32)
19C CAM/MEM 75
IC31 (4/8) SN74HC244ANS
8/10 ADDR 12
8/10 ADDR 11
8/10 ADDR 10
8/10 ADDR 9
8/10 ADDR 8
8/10 ADDR 7
8/10 ADDR 6
8/10 ADDR 5
8/10 ADDR 4
8/10 ADDR 3
8/10 ADDR 2
8/10 ADDR 1
CN1 (19/32)
20A LUT W CS (R) 77
20B LUT W CS (G) 78
20C LUT W CS (B) 79
D5 RD6.8M
D4 RD6.8M
13A MON LUT W CS (R) 49
13B MON LUT W CS (G) 50
13C MON LUT W CS (B) 51
CN1 (20/32)


8 9 10 11 12 13 14 15 16 17 18 19
DATA D7 8/10
DATA D6 8/10
DATA D5 8/10
DATA D4 8/10
DATA D3 8/10
DATA D2 8/10
DATA D1 8/10
DATA D0 8/10
IC19 , IC20
FF
IC19
SN74HC374ANS
IC20
SN74HC374ANS
ULTIPLEXER
IC21
BUFFER
IC21
SN74HC244ANS
IC22
FF
IC22
SN74HC374ANS
IC30
INV.
IC30 (1/6)
SN74HC04ANS
IC30 (2/6)
SN74HC04ANS
IC29
OR
IC29 (1/4)
SN74HC32ANS
LOCAL
S1
AUTO
R68 100k
R67 100k
R66 100k
R65 100k
R64 100k
R63 100k
R69 100k
R70 100k
R79 100k
D3 RD6.8M
S6
S2
C29 0.1
C30 0.1
C31 0.1
C32 0.1
C27 0.1
C28 0.1
IC25
FF
IC25 (2/2)
SN74HC74ANS
IC25 (1/2)
SN74HC74ANS
MEM MIX ON
SRC OFF
CAM/MEM
CAM ON
MEM ON
IC29
OR
IC29 (2/4)
SN74HC32ANS
IC27
AND
IC27 (3/4)
SN74HC08ANS
IC27 (4/4)
SN74HC08ANS
IC28
NAND
IC28 (1/4)
SN74HC00ANS
IC28 (2/4)
SN74HC00ANS
IC28 (3/4)
SN74HC00ANS
R72 10k
IC26
FF
IC26 (1/2)
SN74HC74ANS
C35 0.1
C36 0.1
C33 0.1
C34 0.1
IC23
CY7C291A-35PC
IC23
EPROM
A10 A9 A8 A7 A6 A5 A4 A3 A2 A1 A0
CS3 CS2 CS1
D7 D6 D5 D4 D3 D2 D1 D0
IC24
SN74ALS374ANS
IC24
FF
IC428 (6/6)
SN74ALS04BNS
IC30 , IC428
INV.
IC30 (4/6)
SN74HC04ANS
IC31
BUFFER
IC31 (2/8)
SN74HC244ANS
IC31 (3/8)
SN74HC244ANS
IC31 (6/8)
SN74HC244ANS
R60 100k
IC29 (4/4)
SN74HC32ANS
IC28 (4/4)
SN74HC00ANS
TP12
TP13
IC29
OR
IC28
NAND
IC36
SN74HC374ANS
C41 0.1
D5 RD6.8M
D6 RD6.8M
LUT W CS (R) 1/10
LUT W CS (G) 2/10
LUT W CS (B) 3/10
MON LUT W CS (R) 4/10
MON LUT W CS (G) 4/10
MON LUT W CS (B) 4/10
IC26 (2/2)
SN74HC74ANS
IC29 (3/4)
SN74HC32ANS
IC30 (3/6)
SN74HC04ANS
IC27 (1/4)
SN74HC08ANS
IC27 (2/4)
SN74HC08ANS
5V


IC17 , IC18
DEMULTIPLEXER
IC17 SN74HC138ANS
IC18 SN74HC138ANS
IC19 , IC20
FF
IC19 SN74HC374ANS
IC20 SN74HC374ANS
IC21
BUFFER
IC21 SN74HC244ANS
IC22
FF
IC22 SN74HC374ANS
IC23
EPROM
IC23 CY7C291A-35PC
IC24
FF
IC24 SN74ALS374ANS
IC25
FF
IC25 (1/2) SN74HC74ANS
IC25 (2/2) SN74HC74ANS
IC26
FF
IC26 (1/2) SN74HC74ANS
IC26 (2/2) SN74HC74ANS
IC27
AND
IC28
NAND
IC29
OR
IC30
INV.
IC36 SN74HC374ANS
DATA Ð7
DATA Ð6
DATA Ð5
DATA Ð4
DATA Ð3
DATA Ð2
DATA Ð1
DATA Ð0
LOCAL
S1
AUTO
MEM MIX ON
SRC OFF
CAM/MEM
CAM ON
MEM ON
LUT W CS (R) 1/10
LUT W CS (G) 2/10
LUT W CS (B) 3/10
MON LUT W CS (R) 4/10
MON LUT W CS (G) 4/10
MON LUT W CS (B) 4/10
TP12
TP13
S6
S2
R63 100k
R64 100k
R65 100k
R66 100k
R67 100k
R68 100k
R69 100k
R70 100k
R79 100k
Ð3 RÐ6.8M
Ð4 RÐ6.8M
Ð5 RÐ6.8M
Ð6 RÐ6.8M
5V

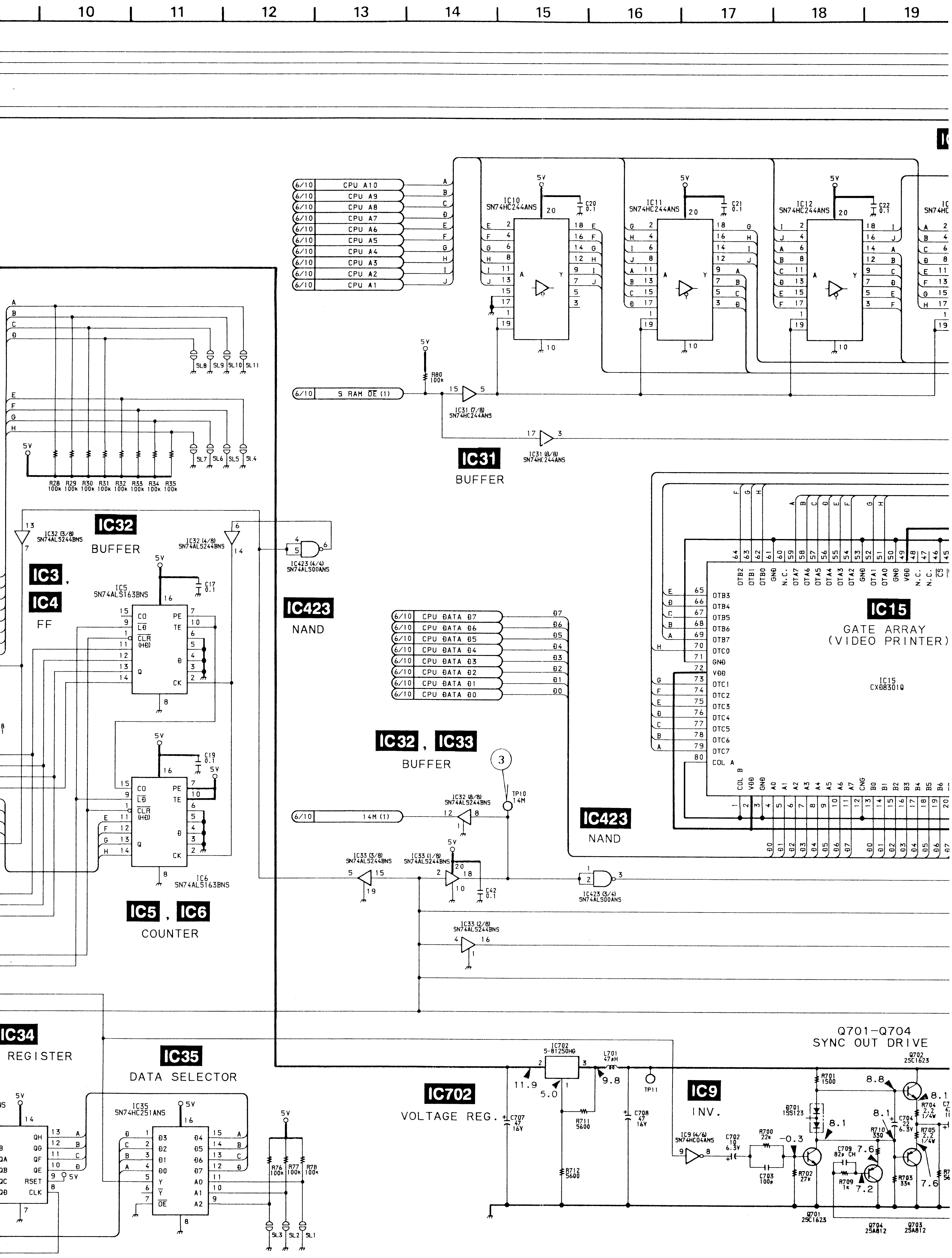

17
18
19
20
21
22
23
CAM ON
MEM ON
C
D
IC27
AND
IC28
NAND
IC30
INV.
5V
R72 10k
D2 1S2837
R74 10k
R75 10k
IC27 (3/4) SN74HC08ANS
IC27 (4/4) SN74HC08ANS
IC28 (2/4) SN74HC00ANS
IC28 (3/4) SN74HC00ANS
IC30 (5/6) SN74HC04ANS
IC30 (6/6) SN74HC04ANS
C39 1 16V
C40 0.1
S7
S8
CAM
MEM
IC26
FF
IC26 (1/2) SN74HC74ANS
MEM ON 8/10
IC30, IC428
INV.
IC24 SN74ALS374ANS
C34 0.1
IC428 (6/6) SN74ALS04BNS
A
B
C
ADD SEL (R) 1/10
ADD SEL (G) 2/10
ADD SEL (B) 3/10
CAM/MEM SFT (R) 1/10
CAM/MEM SFT (G) 2/10
CAM/MEM SFT (B) 3/10
IC30 (4/6) SN74HC04ANS
IC24
FF
IC31
BUFFER
DISP CONT (2) 4/10
R60 100k
R62 100k
R61 100k
IC31 (2/8) SN74HC244ANS
IC31 (3/8) SN74HC244ANS
IC31 (6/8) SN74HC244ANS
C RAM KEY 10D CN1 (21/32)
C-BLKG 11C CN1 (22/32)
VD 12D CN1 (23/32)
TO CN-919 BOARD CN1
14M (1) 7/10
CONT O.E 7/10
S RAM OE (1) 7/10
MON LUT OE 4/10
PRI SET (R) 1/10
PRI SET (G) 2/10
PRI SET (B) 3/10
PRI SET (MON) 4/10
C41 0.1
D
Q
OE
CK
IC36
FF
IC36 SN74HC374ANS

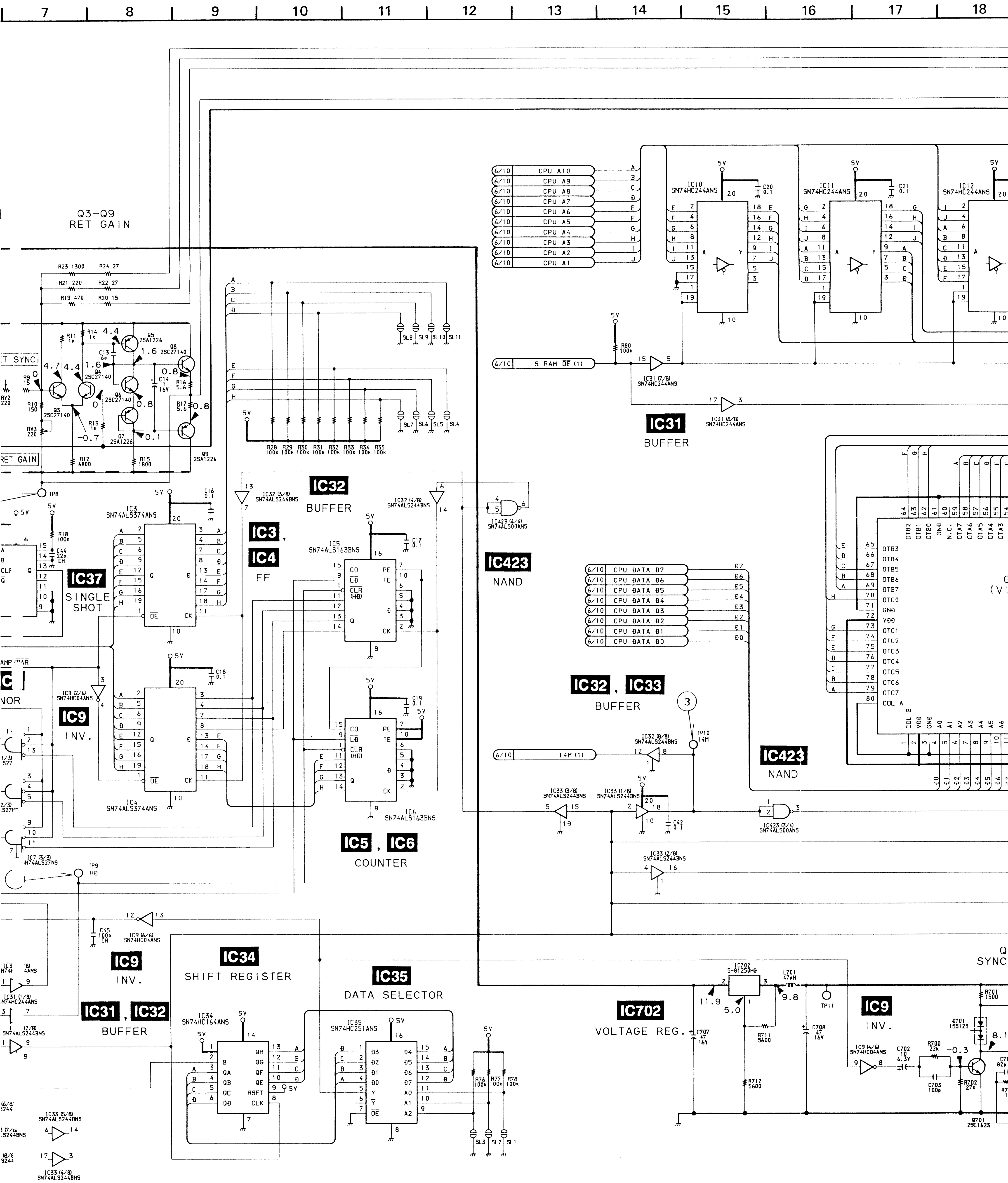
]

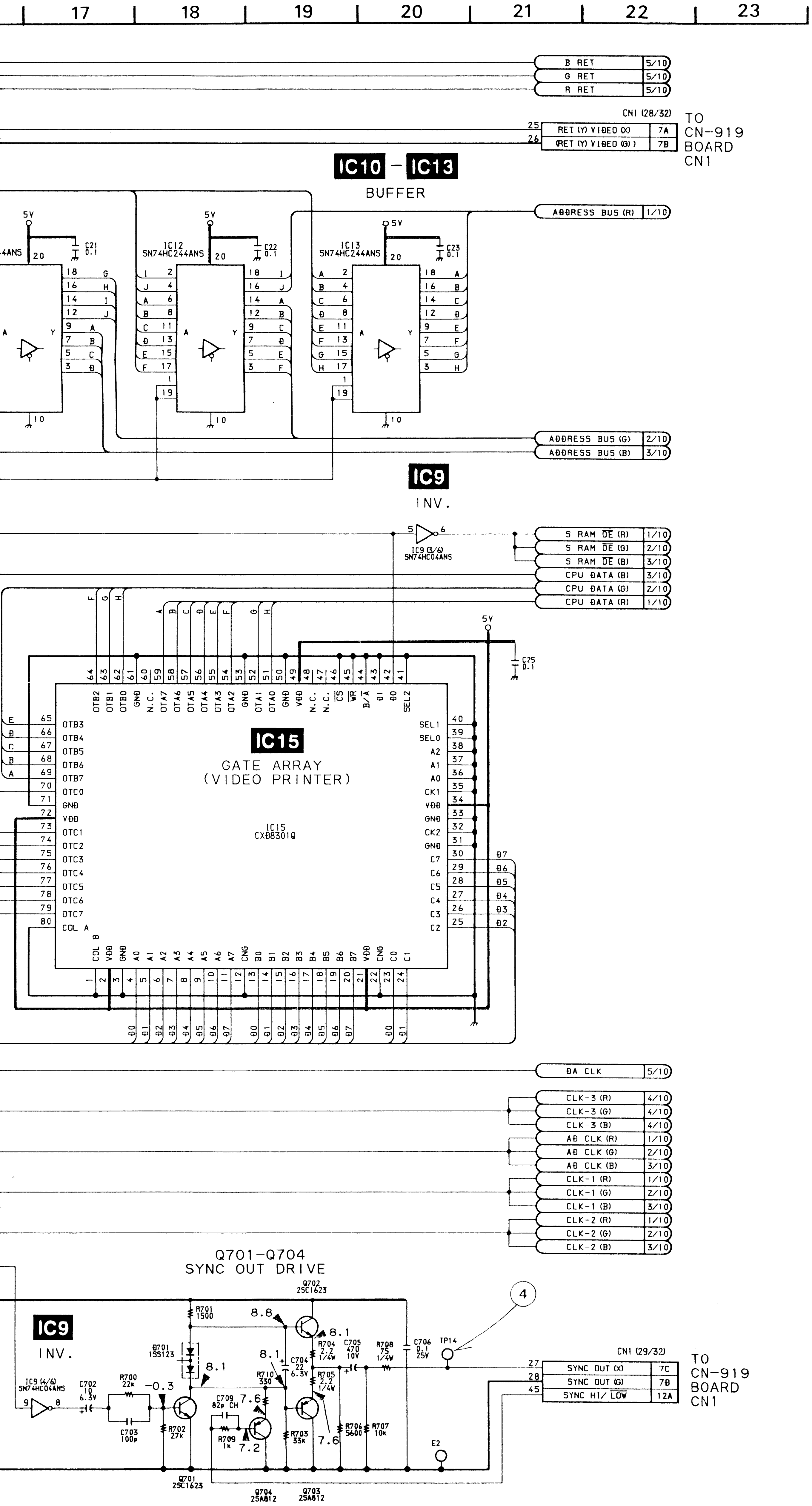

TO CN-919 BOARD CN2
CN2 (4/32)
+5V (D)
D.GND
F1
FL1
TP1 5V
E1
Q3-Q9 RET GAIN
IC1 +5V REG.
NJM7805FA
Q1, Q2 AMP.
ON SYNC
RET SYNC
RET GAIN
TO CN-919 BOARD CN1
CN1 (24/32)
+12V (A)
A.GND
-12V (A)
IC2 -9V REG.
NJM7909FA
A.GND
TP8
ON SYNC
C SYNC
IC32 BUFFER
IC9 INV.
IC37 SINGLE SHOT
TC74HC221AF
IC3, IC4 FF
SN74ALS374ANS
IC32 BUFFER
IC5, IC6 COUNTER
SN74ALS163BNS
V SYNC (R)
V SYNC (G)
V SYNC (B)
TEST DATA (R)
TEST DATA (G)
TEST DATA (B)
CONT D.E
RAMP/BAR
CAM/TEST
IC8 OR
IC7 NOR
IC9 INV.
R TEST CONT
G TEST CONT
B TEST CONT
CAM (R)
CAM (G)
CAM (B)
CABLE 5/25 (R)
CABLE 5/25 (G)
CABLE 5/25 (B)
TP9 HD
IC9 INV.
IC34 SHIFT REGISTER
SN74HC164ANS
IC35 DATA SEL
SN74HC251ANS
IC31, IC32 BUFFER
SN74HC244ANS
CN1 (26/32)
CABLE 5/25
CN1 (27/32)
HD
CN2 (5/32)
14M
C SYNC
SN74ALS244BNS

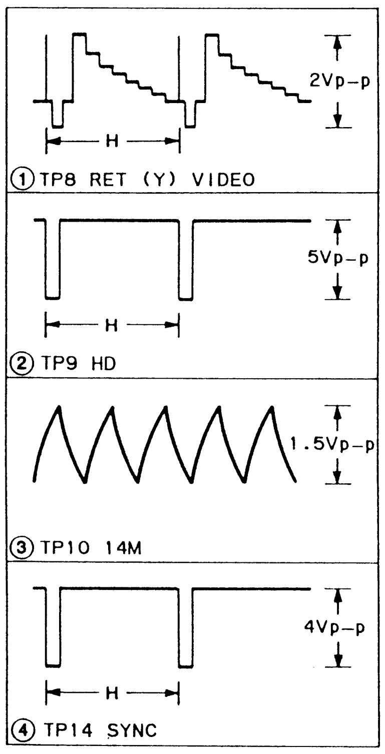
A/D,D/A ADA-33

A/D,D/A ADA-33

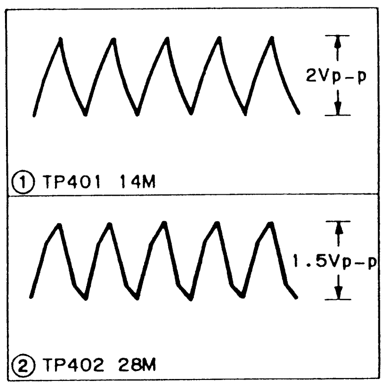

IC31
BUFFER
IC32
BUFFER
IC3, IC4
FF
IC423
NAND
IC15
GATE ARRAY
(VIDEO PRINTER)
IC15 CXD8301Q
IC32, IC33
BUFFER
IC423
NAND
IC5, IC6
COUNTER
IC34
REGISTER
IC35
DATA SELECTOR
IC702
VOLTAGE REG.
IC9
INV.
Q701-Q704
SYNC OUT DRIVE
IC10 SN74HC244ANS
IC11 SN74HC244ANS
IC12 SN74HC244ANS
IC5 SN74ALS163BNS
IC6 SN74ALS163BNS
IC35 SN74HC251ANS
IC702 S-81250HG
CPU A10
CPU A9
CPU A8
CPU A7
CPU A6
CPU A5
CPU A4
CPU A3
CPU A2
CPU A1
S RAM OE (1)
CPU DATA D7
CPU DATA D6
CPU DATA D5
CPU DATA D4
CPU DATA D3
CPU DATA D2
CPU DATA D1
CPU DATA D0
14M (1)
TP10 14M
TP11

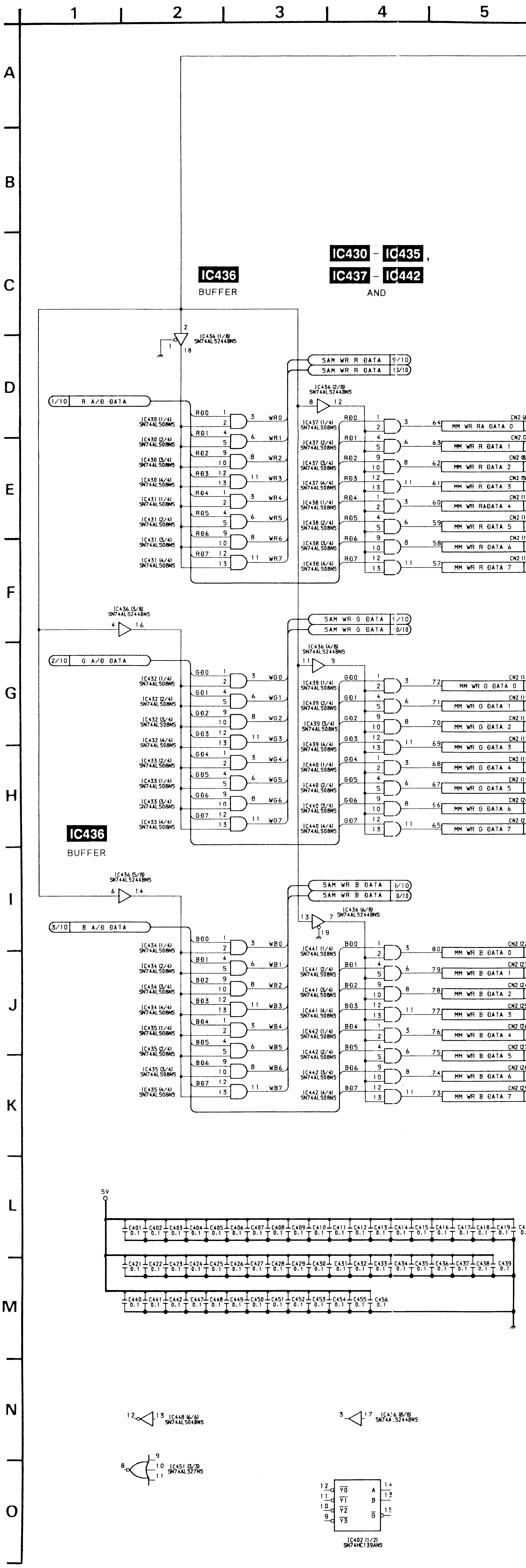

7
8
9
10
11
12
13
14
15
16
17
18
Q3-Q9
RET GAIN
RET SYNC
RET GAIN
IC31
BUFFER
IC32
BUFFER
IC3, IC4
FF
IC37
SINGLE SHOT
IC423
NAND
IC9
INV.
IC5, IC6
COUNTER
IC32, IC33
BUFFER
IC423
NAND
IC9
INV.
IC34
SHIFT REGISTER
IC35
DATA SELECTOR
IC31, IC32
BUFFER
IC702
VOLTAGE REG.
IC9
INV.
CPU A10
CPU A9
CPU A8
CPU A7
CPU A6
CPU A5
CPU A4
CPU A3
CPU A2
CPU A1
S RAM OE (1)
CPU DATA D7
CPU DATA D6
CPU DATA D5
CPU DATA D4
CPU DATA D3
CPU DATA D2
CPU DATA D1
CPU DATA D0
14M (1)
IC10 SN74HC244ANS
IC11 SN74HC244ANS
IC12 SN74HC244ANS
IC3 SN74ALS374ANS
IC4 SN74ALS374ANS
IC5 SN74ALS163BNS
IC6 SN74ALS163BNS
IC34 SN74HC164ANS
IC35 SN74HC251ANS
IC702 S-81250HG
IC423 (4/4) SN74ALS00ANS
IC423 (3/4) SN74ALS00ANS
TP8
TP9 HD
TP10 14M
TP11
Q701 2SC1623

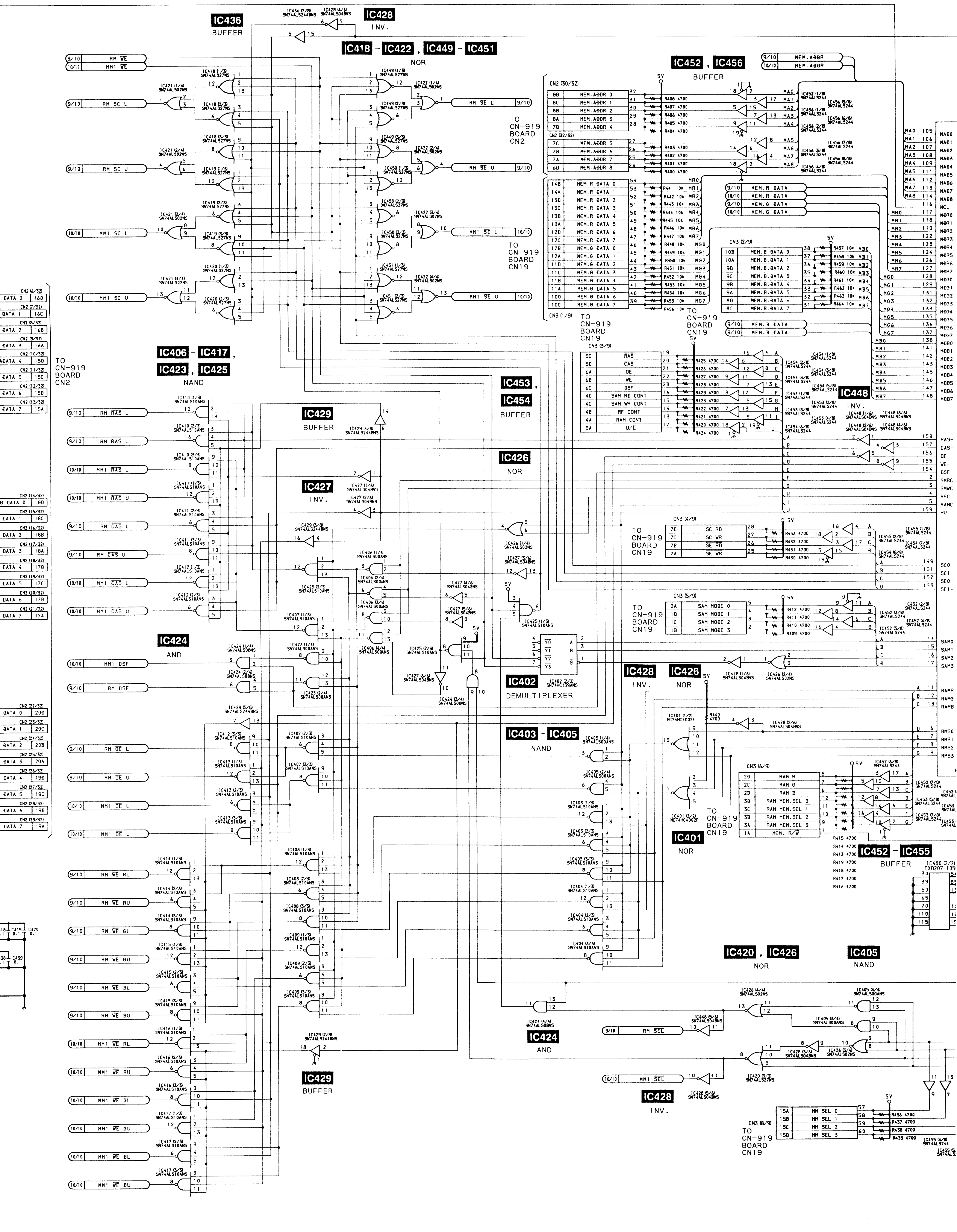

17
18
19
20
21
22
23
B RET 5/10
G RET 5/10
R RET 5/10
CN1 (28/32)
RET (Y) VIDEO (X) 7A
(RET (Y) VIDEO (G)) 7B
TO CN-919 BOARD CN1
IC10 - IC13
BUFFER
ADDRESS BUS (R) 1/10
IC12 SN74HC244ANS
IC13 SN74HC244ANS
C21 0.1
C22 0.1
C23 0.1
5V
ADDRESS BUS (G) 2/10
ADDRESS BUS (B) 3/10
IC9
INV.
IC9 (3/6) SN74HC04ANS
S RAM OE (R) 1/10
S RAM OE (G) 2/10
S RAM OE (B) 3/10
CPU DATA (B) 3/10
CPU DATA (G) 2/10
CPU DATA (R) 1/10
C25 0.1
IC15
GATE ARRAY (VIDEO PRINTER)
IC15 CXD8301Q
DA CLK 5/10
CLK-3 (R) 4/10
CLK-3 (G) 4/10
CLK-3 (B) 4/10
AD CLK (R) 1/10
AD CLK (G) 2/10
AD CLK (B) 3/10
CLK-1 (R) 1/10
CLK-1 (G) 2/10
CLK-1 (B) 3/10
CLK-2 (R) 1/10
CLK-2 (G) 2/10
CLK-2 (B) 3/10
Q701-Q704
SYNC OUT DRIVE
IC9
INV.
IC9 (4/6) SN74HC04ANS
Q701 2SC1623
Q702 2SC1623
Q703 2SA812
Q704 2SA812
D701 1SS123
R700 22k
R701 1500
R702 27k
R703 33k
R704 2.2 1/4W
R705 2.2 1/4W
R706 5600
R707 10k
R708 75 1/4W
R709 1k
R710 330
C702 10 6.3V
C703 100p
C704 22 6.3V
C705 470 10V
C706 0.1 25V
C709 82p CH
-0.3
8.1
8.8
7.6
7.2
TP14
E2
④
CN1 (29/32)
SYNC OUT (X) 7C
SYNC OUT (G) 7D
SYNC HI/LOW 12A
TO CN-919 BOARD CN1

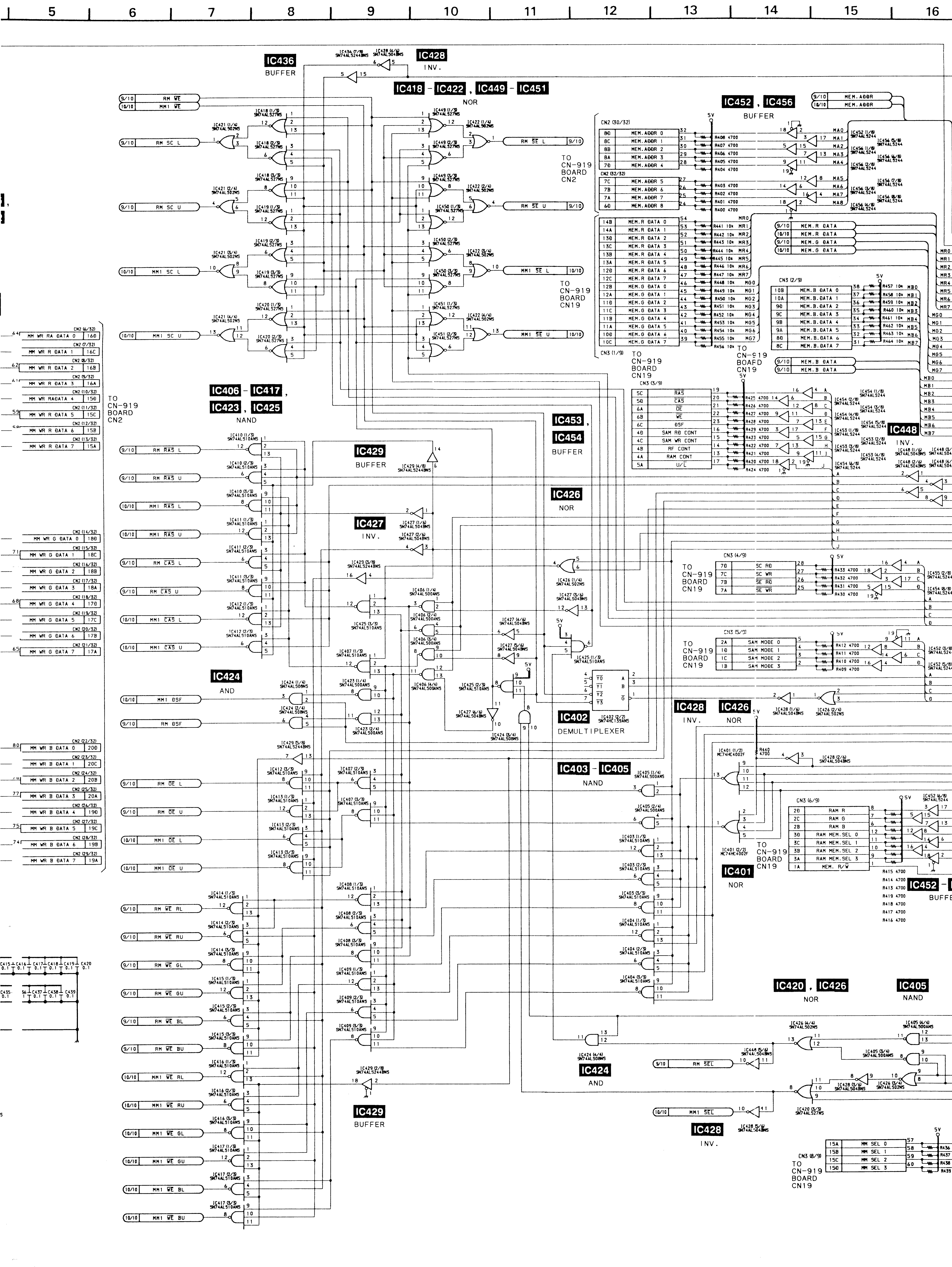

2Vp-p
H
① TP8 RET (Y) VIDEO
5Vp-p
H
② TP9 HD
1.5Vp-p
③ TP10 14M
4Vp-p
H
④ TP14 SYNC

ADA-33 — 8/10 — (FRAME MEMORY)




1
2
3
4
5
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
IC436
BUFFER
IC430 - IC435,
IC437 - IC442
AND
IC436 (1/8) SN74ALS244BNS
SAM WR R DATA 9/10
SAM WR R DATA 10/10
1/10 R A/D DATA
IC436 (2/8) SN74ALS244BNS
MM WR RA DATA 0
MM WR R DATA 1
MM WR R DATA 2
MM WR R DATA 3
MM WR RADATA 4
MM WR R DATA 5
MM WR R DATA 6
MM WR R DATA 7
IC436 (3/8) SN74ALS244BNS
SAM WR G DATA 9/10
SAM WR G DATA 10/10
2/10 G A/D DATA
IC436 (4/8) SN74ALS244BNS
MM WR G DATA 0
MM WR G DATA 1
MM WR G DATA 2
MM WR G DATA 3
MM WR G DATA 4
MM WR G DATA 5
MM WR G DATA 6
MM WR G DATA 7
IC436 (5/8) SN74ALS244BNS
SAM WR B DATA 9/10
SAM WR B DATA 10/10
3/10 B A/D DATA
IC436 (6/8) SN74ALS244BNS
MM WR B DATA 0
MM WR B DATA 1
MM WR B DATA 2
MM WR B DATA 3
MM WR B DATA 4
MM WR B DATA 5
MM WR B DATA 6
MM WR B DATA 7
5V
IC448 (6/6) SN74ALS04BNS
IC436 (8/8) SN74ALS244BNS
IC451 (3/3) SN74ALS27NS
IC402 (1/2) SN74HC139ANS


IC436
BUFFER
IC428
INV.
IC418 - IC422 , IC449 - IC451
NOR
IC452 , IC456
BUFFER
RM WE
MM1 WE
RM SC L
RM SC U
MM1 SC L
MM1 SC U
RM SE L
RM SE U
MM1 SE L
MM1 SE U
TO CN-919 BOARD CN2
TO CN-919 BOARD CN19
MEM.ADDR
MEM.ADDR 0
MEM.ADDR 1
MEM.ADDR 2
MEM.ADDR 3
MEM.ADDR 4
MEM.ADDR 5
MEM.ADDR 6
MEM.ADDR 7
MEM.ADDR 8
MEM.R DATA 0
MEM.R DATA 1
MEM.R DATA 2
MEM.R DATA 3
MEM.R DATA 4
MEM.R DATA 5
MEM.R DATA 6
MEM.R DATA 7
MEM.G DATA 0
MEM.G DATA 1
MEM.G DATA 2
MEM.G DATA 3
MEM.G DATA 4
MEM.G DATA 5
MEM.G DATA 6
MEM.G DATA 7
MEM.R DATA
MEM.G DATA
MEM.B DATA 0
MEM.B DATA 1
MEM.B DATA 2
MEM.B DATA 3
MEM.B DATA 4
MEM.B DATA 5
MEM.B DATA 6
MEM.B DATA 7
MEM.B DATA
IC406 - IC417 ,
IC423 , IC425
NAND
IC429
BUFFER
IC427
INV.
IC453 ,
IC454
BUFFER
IC426
NOR
IC448
INV.
RAS
CAS
OE
WE
DSF
SAM RD CONT
SAM WR CONT
RF CONT
RAM CONT
U/L
RM RAS L
RM RAS U
MM1 RAS L
MM1 RAS U
RM CAS L
RM CAS U
MM1 CAS L
MM1 CAS U
SC RD
SC WR
SE RD
SE WR
SAM MODE 0
SAM MODE 1
SAM MODE 2
SAM MODE 3
IC424
AND
MM1 DSF
RM DSF
IC402
DEMULTIPLEXER
IC428
INV.
IC426
NOR
IC403 - IC405
NAND
RM OE L
RM OE U
MM1 OE L
MM1 OE U
RAM R
RAM G
RAM B
RAM MEM.SEL 0
RAM MEM.SEL 1
RAM MEM.SEL 2
RAM MEM.SEL 3
MEM. R/W
IC401
NOR
IC452 - IC455
BUFFER
RM WE RL
RM WE RU
RM WE GL
RM WE GU
RM WE BL
RM WE BU
MM1 WE RL
MM1 WE RU
MM1 WE GL
MM1 WE GU
MM1 WE BL
MM1 WE BU
IC420 , IC426
NOR
IC405
NAND
RM SEL
MM1 SEL
IC424
AND
IC429
BUFFER
IC428
INV.
MM SEL 0
MM SEL 1
MM SEL 2
MM SEL 3
TO CN-919 BOARD CN19
5V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14
15
16
IC436
BUFFER
IC428
INV.
IC418 - IC422 , IC449 - IC451
NOR
IC452 , IC456
BUFFER
TO CN-919 BOARD CN2
TO CN-919 BOARD CN19
IC406 - IC417 , IC423 , IC425
NAND
IC453 , IC454
BUFFER
IC429
BUFFER
IC448
INV.
IC426
NOR
IC427
INV.
IC424
AND
IC402
DEMULTIPLEXER
IC428
INV.
IC426
NOR
IC403 - IC405
NAND
IC401
NOR
IC452 -
BUFFE
IC420 , IC426
NOR
IC405
NAND
IC424
AND
IC429
BUFFER
IC428
INV.
RM WE
MM1 WE
RM SC L
RM SC U
MM1 SC L
MM1 SC U
RM SE L
RM SE U
MM1 SE L
MM1 SE U
RM RAS L
RM RAS U
MM1 RAS L
MM1 RAS U
RM CAS L
RM CAS U
MM1 CAS L
MM1 CAS U
MM1 DSF
RM DSF
RM OE L
RM OE U
MM1 OE L
MM1 OE U
RM WE RL
RM WE RU
RM WE GL
RM WE GU
RM WE BL
RM WE BU
MM1 WE RL
MM1 WE RU
MM1 WE GL
MM1 WE GU
MM1 WE BL
MM1 WE BU
RM SEL
MM1 SEL
MEM.ADDR
MEM.R DATA
MEM.G DATA
MEM.B DATA
MEM.ADDR 0
MEM.ADDR 1
MEM.ADDR 2
MEM.ADDR 3
MEM.ADDR 4
MEM.ADDR 5
MEM.ADDR 6
MEM.ADDR 7
MEM.ADDR 8
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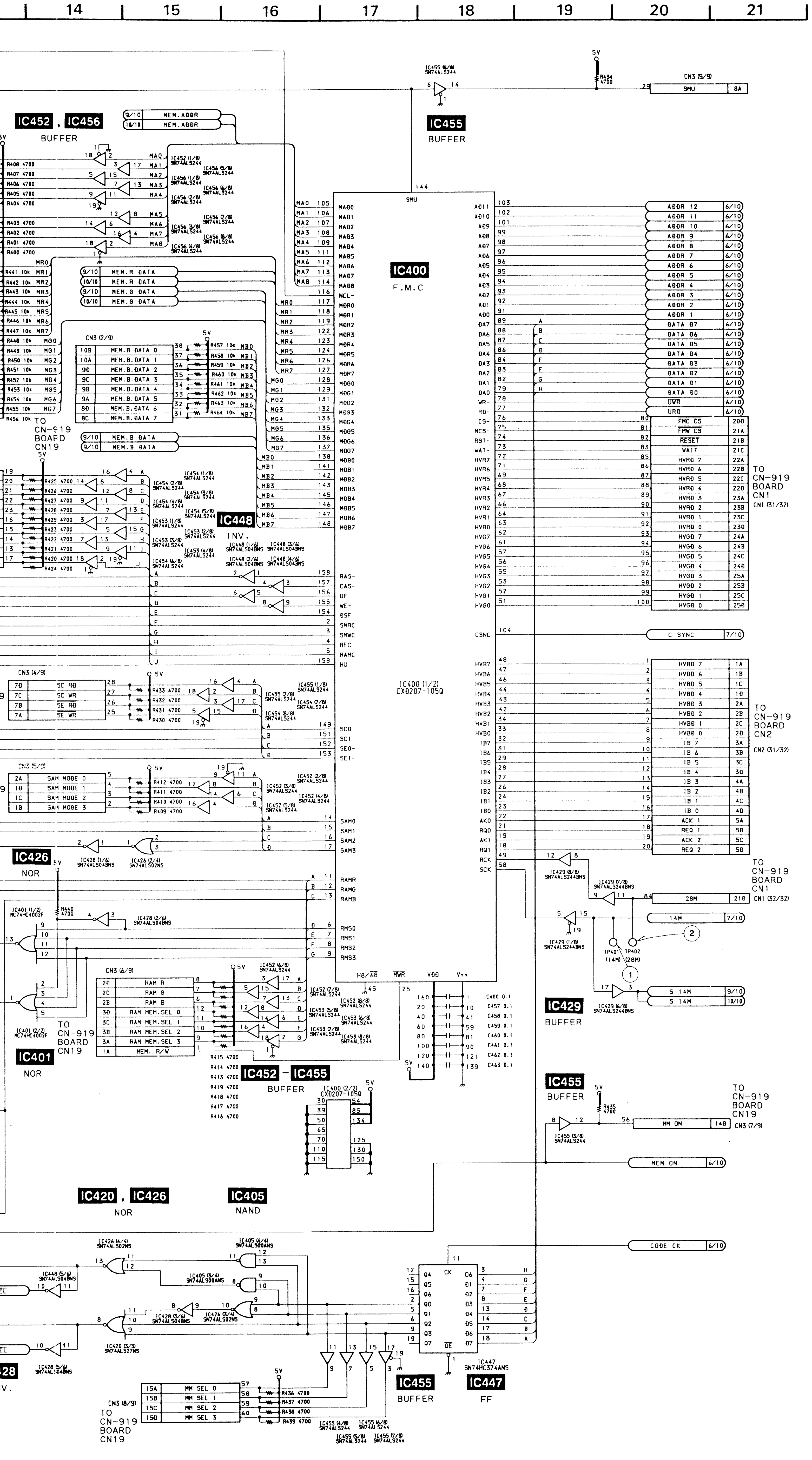
MEM.R DATA 1
MEM.R DATA 2
MEM.R DATA 3
MEM.R DATA 4
MEM.R DATA 5
MEM.R DATA 6
MEM.R DATA 7
MEM.G DATA 0
MEM.G DATA 1
MEM.G DATA 2
MEM.G DATA 3
MEM.G DATA 4
MEM.G DATA 5
MEM.G DATA 6
MEM.G DATA 7
MEM.B DATA 0
MEM.B DATA 1
MEM.B DATA 2
MEM.B DATA 3
MEM.B DATA 4
MEM.B DATA 5
MEM.B DATA 6
MEM.B DATA 7
RAS
CAS
OE
WE
DSF
SAM RD CONT
SAM WR CONT
RF CONT
RAM CONT
U/L
SC RD
SC WR
SE RD
SE WR
SAM MODE 0
SAM MODE 1
SAM MODE 2
SAM MODE 3
RAM R
RAM G
RAM B
RAM MEM.SEL 0
RAM MEM.SEL 1
RAM MEM.SEL 2
RAM MEM.SEL 3
MEM. R/W
MM SEL 0
MM SEL 1
MM SEL 2
MM SEL 3
MM WR R DATA 0
MM WR R DATA 1
MM WR R DATA 2
MM WR R DATA 3
MM WR R DATA 4
MM WR R DATA 5
MM WR R DATA 6
MM WR R DATA 7
MM WR G DATA 0
MM WR G DATA 1
MM WR G DATA 2
MM WR G DATA 3
MM WR G DATA 4
MM WR G DATA 5
MM WR G DATA 6
MM WR G DATA 7
MM WR B DATA 0
MM WR B DATA 1
MM WR B DATA 2
MM WR B DATA 3
MM WR B DATA 4
MM WR B DATA 5
MM WR B DATA 6
MM WR B DATA 7
SN74ALS27NS
SN74ALS02NS
SN74ALS10ANS
SN74ALS00ANS
SN74ALS08NS
SN74ALS04BNS
SN74ALS244BNS
SN74ALS244
SN74HC139ANS
MC74HC4002F


14
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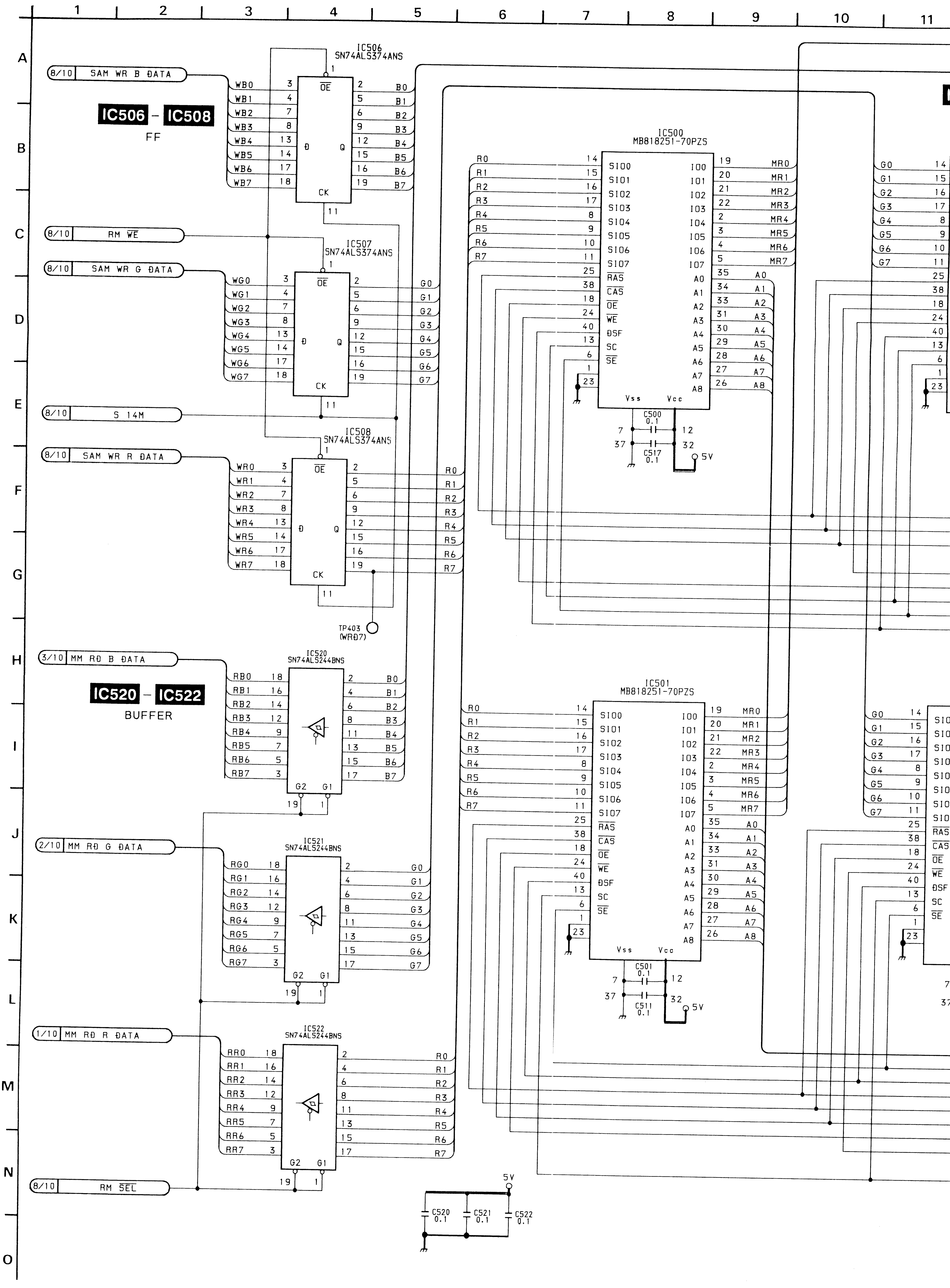
21
IC452 , IC456
BUFFER
IC455
BUFFER
IC400
F.M.C
IC400 (1/2)
CX0207-105Q
IC448
INV.
IC426
NOR
IC401
NOR
IC452 - IC455
BUFFER
IC400 (2/2)
CX0207-105Q
IC420 , IC426
NOR
IC405
NAND
IC429
BUFFER
IC455
BUFFER
IC455
BUFFER
IC447
FF
MEM. ADDR
MEM. R DATA
MEM. G DATA
MEM. B DATA
MEM. B DATA 0
MEM. B DATA 1
MEM. B DATA 2
MEM. B DATA 3
MEM. B DATA 4
MEM. B DATA 5
MEM. B DATA 6
MEM. B DATA 7
TO CN-919 BOARD CN19
SC RD
SC WR
SE RD
SE WR
SAM MODE 0
SAM MODE 1
SAM MODE 2
SAM MODE 3
RAM R
RAM G
RAM B
RAM MEM. SEL 0
RAM MEM. SEL 1
RAM MEM. SEL 2
RAM MEM. SEL 3
MEM. R/W
MM SEL 0
MM SEL 1
MM SEL 2
MM SEL 3
SMU
ADDR 12
ADDR 11
ADDR 10
ADDR 9
ADDR 8
ADDR 7
ADDR 6
ADDR 5
ADDR 4
ADDR 3
ADDR 2
ADDR 1
DATA 07
DATA 06
DATA 05
DATA 04
DATA 03
DATA 02
DATA 01
DATA 00
DWR
DRD
FMC CS
FMW CS
RESET
WAIT
HVRD 7
HVRD 6
HVRD 5
HVRD 4
HVRD 3
HVRD 2
HVRD 1
HVRD 0
HVGD 7
HVGD 6
HVGD 5
HVGD 4
HVGD 3
HVGD 2
HVGD 1
HVGD 0
TO CN-919 BOARD CN1
C SYNC
HVBD 7
HVBD 6
HVBD 5
HVBD 4
HVBD 3
HVBD 2
HVBD 1
HVBD 0
IB 7
IB 6
IB 5
IB 4
IB 3
IB 2
IB 1
IB 0
ACK 1
REQ 1
ACK 2
REQ 2
TO CN-919 BOARD CN2
28M
14M
TP401 (14M)
TP402 (28M)
S 14M
MM ON
TO CN-919 BOARD CN19
MEM ON
CODE CK
5V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9
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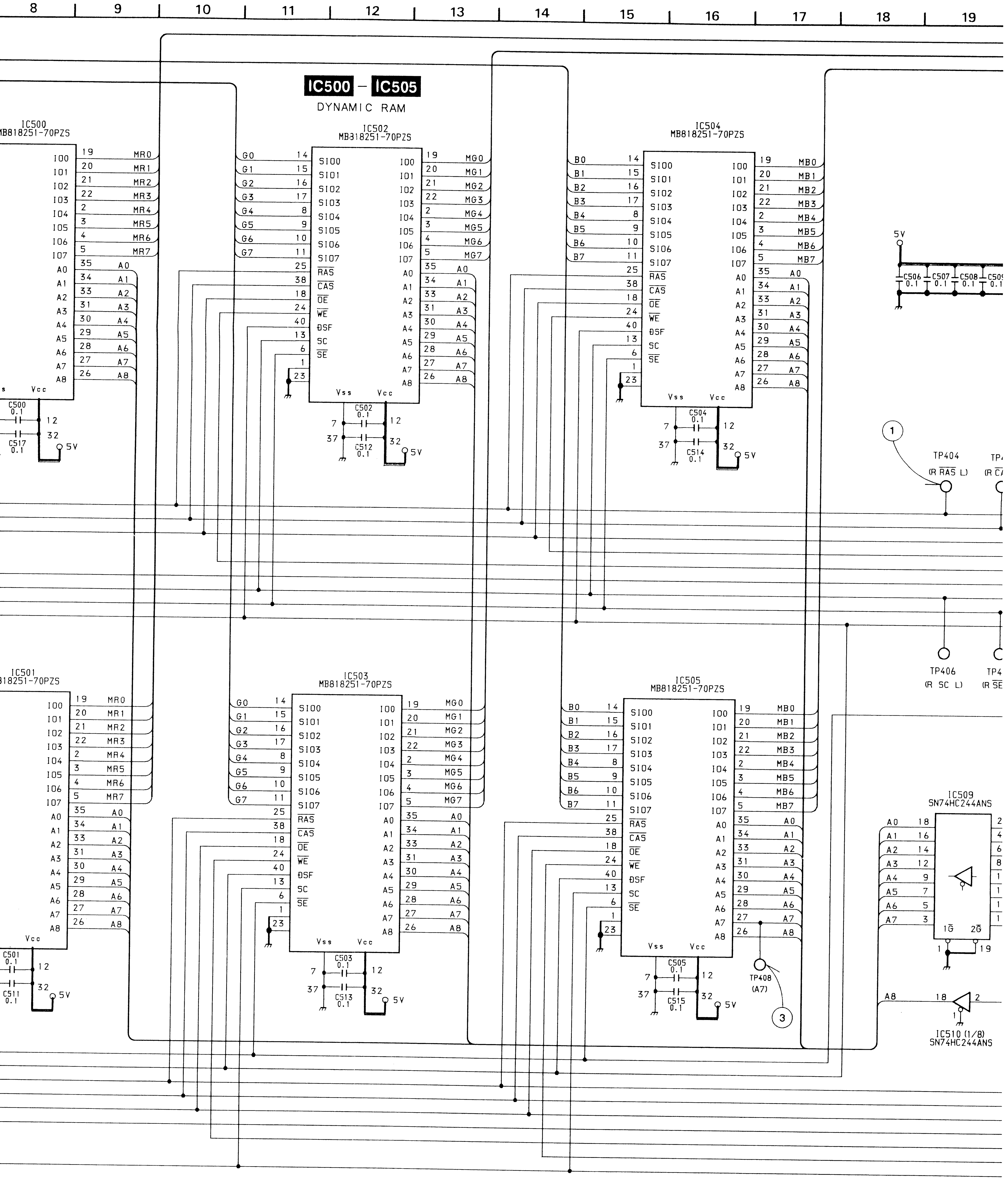
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
8/10 SAM WR B DATA
IC506 - IC508
FF
IC506
SN74ALS374ANS
WB0
WB1
WB2
WB3
WB4
WB5
WB6
WB7
OE
D
Q
CK
B0
B1
B2
B3
B4
B5
B6
B7
8/10 RM WE
8/10 SAM WR G DATA
IC507
SN74ALS374ANS
WG0
WG1
WG2
WG3
WG4
WG5
WG6
WG7
G0
G1
G2
G3
G4
G5
G6
G7
8/10 S 14M
8/10 SAM WR R DATA
IC508
SN74ALS374ANS
WR0
WR1
WR2
WR3
WR4
WR5
WR6
WR7
R0
R1
R2
R3
R4
R5
R6
R7
TP403
(WRD7)
3/10 MM RD B DATA
IC520 - IC522
BUFFER
IC520
SN74ALS244BNS
RB0
RB1
RB2
RB3
RB4
RB5
RB6
RB7
G2
G1
2/10 MM RD G DATA
IC521
SN74ALS244BNS
RG0
RG1
RG2
RG3
RG4
RG5
RG6
RG7
1/10 MM RD R DATA
IC522
SN74ALS244BNS
RR0
RR1
RR2
RR3
RR4
RR5
RR6
RR7
8/10 RM SEL
IC500
MB818251-70PZS
SIO0
SIO1
SIO2
SIO3
SIO4
SIO5
SIO6
SIO7
RAS
CAS
OE
WE
DSF
SC
SE
IO0
IO1
IO2
IO3
IO4
IO5
IO6
IO7
A0
A1
A2
A3
A4
A5
A6
A7
A8
Vss
Vcc
MR0
MR1
MR2
MR3
MR4
MR5
MR6
MR7
C500
0.1
C517
0.1
5V
IC501
MB818251-70PZS
C501
0.1
C511
0.1
C520
0.1
C521
0.1
C522
0.1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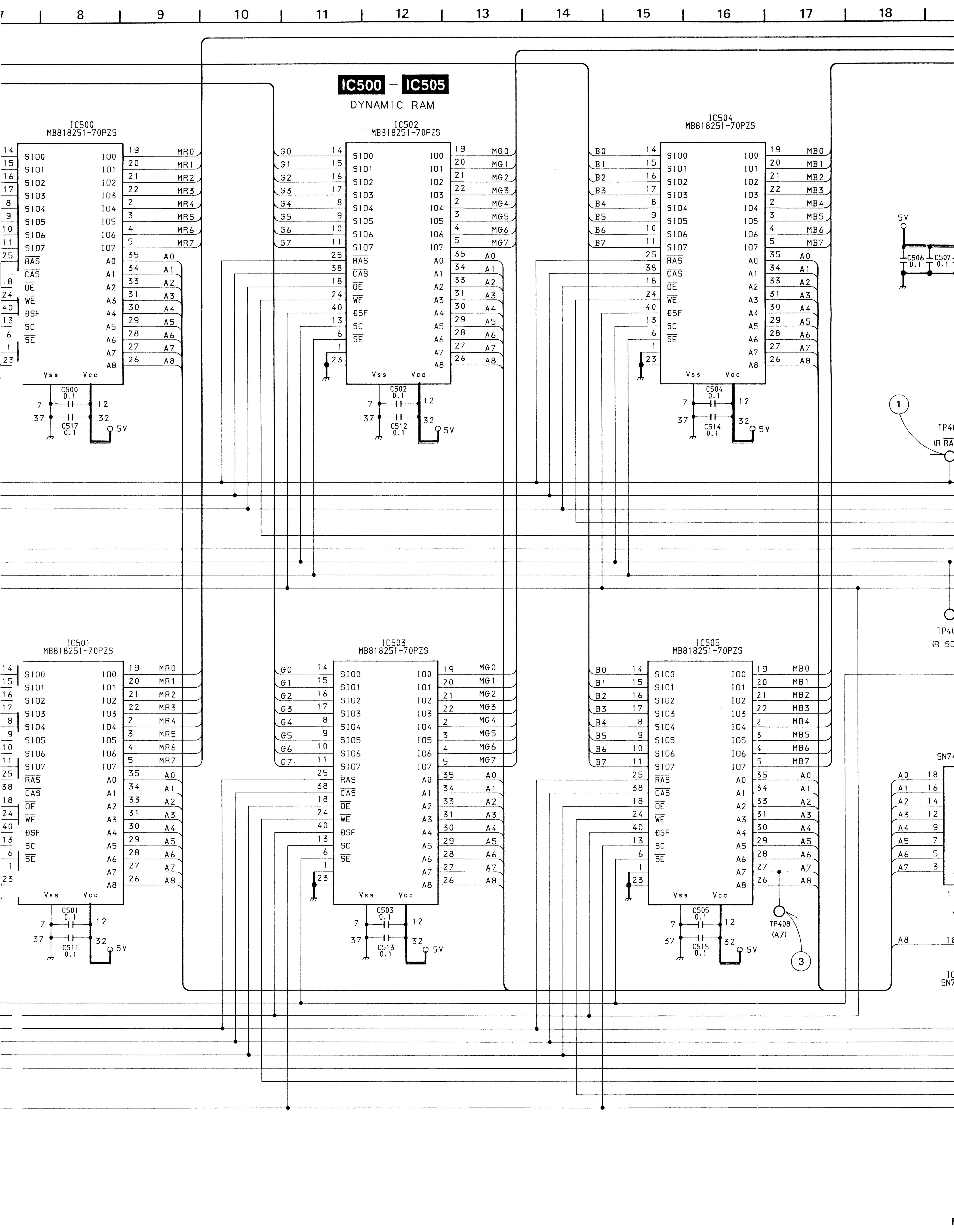
IC500 - IC505
DYNAMIC RAM
IC500
MB818251-70PZS
IC502
MB818251-70PZS
IC504
MB818251-70PZS
IC501
MB818251-70PZS
IC503
MB818251-70PZS
IC505
MB818251-70PZS
SIO0 SIO1 SIO2 SIO3 SIO4 SIO5 SIO6 SIO7
IO0 IO1 IO2 IO3 IO4 IO5 IO6 IO7
RAS CAS OE WE DSF SC SE
A0 A1 A2 A3 A4 A5 A6 A7 A8
Vss Vcc
MR0 MR1 MR2 MR3 MR4 MR5 MR6 MR7
G0 G1 G2 G3 G4 G5 G6 G7
MG0 MG1 MG2 MG3 MG4 MG5 MG6 MG7
B0 B1 B2 B3 B4 B5 B6 B7
MB0 MB1 MB2 MB3 MB4 MB5 MB6 MB7
C500 0.1
C517 0.1
C502 0.1
C512 0.1
C504 0.1
C514 0.1
C501 0.1
C511 0.1
C503 0.1
C513 0.1
C505 0.1
C515 0.1
C506 0.1
C507 0.1
C508 0.1
5V
①
TP404
(R RAS L)
TP406
(R SC L)
TP408
(A7)
③
IC509
SN74HC244ANS
1G 2G
IC510 (1/8)
SN74HC244ANS

8
9
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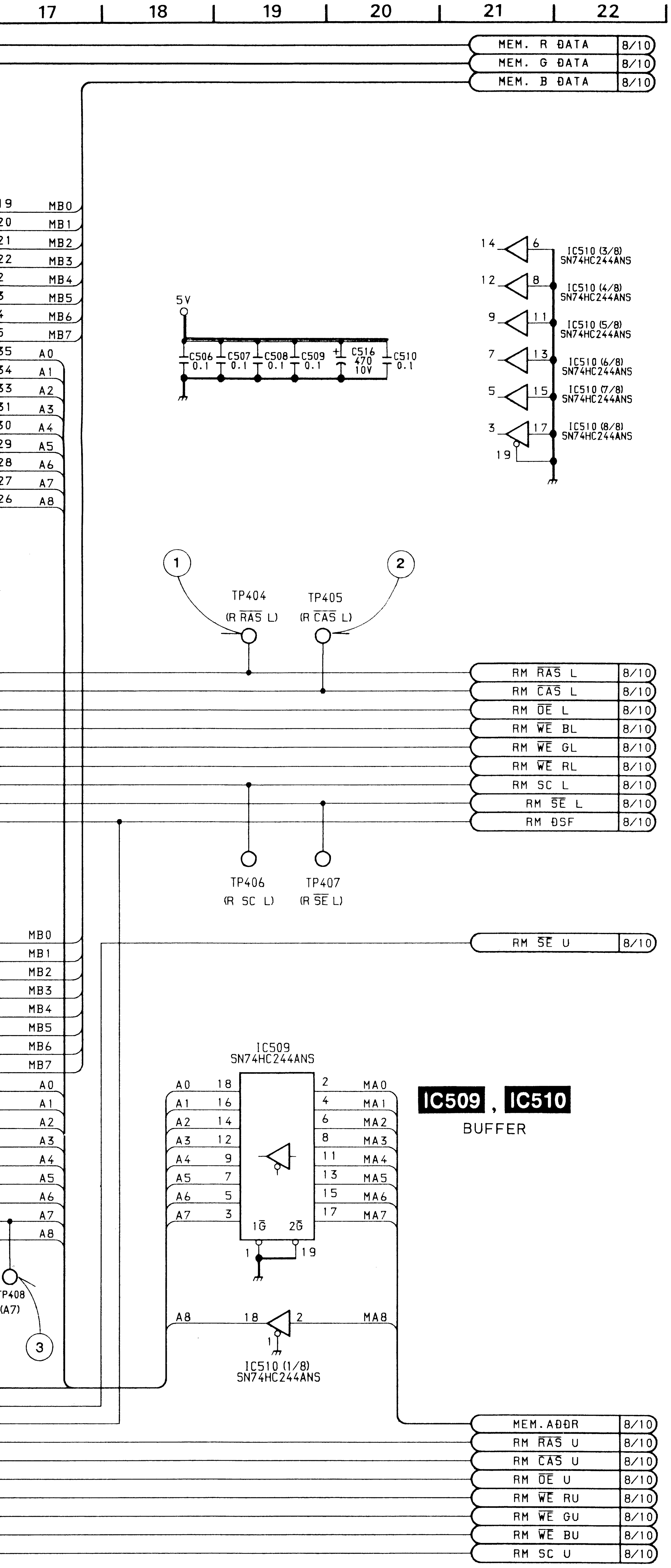
18
IC500 - IC505
DYNAMIC RAM
IC500 MB818251-70PZS
IC501 MB818251-70PZS
IC502 MB818251-70PZS
IC503 MB818251-70PZS
IC504 MB818251-70PZS
IC505 MB818251-70PZS
SIO0
SIO1
SIO2
SIO3
SIO4
SIO5
SIO6
SIO7
RAS
CAS
OE
WE
DSF
SC
SE
IO0
IO1
IO2
IO3
IO4
IO5
IO6
IO7
A0
A1
A2
A3
A4
A5
A6
A7
A8
Vss
Vcc
MR0
MR1
MR2
MR3
MR4
MR5
MR6
MR7
MG0
MG1
MG2
MG3
MG4
MG5
MG6
MG7
MB0
MB1
MB2
MB3
MB4
MB5
MB6
MB7
G0
G1
G2
G3
G4
G5
G6
G7
B0
B1
B2
B3
B4
B5
B6
B7
C500 0.1
C501 0.1
C502 0.1
C503 0.1
C504 0.1
C505 0.1
C511 0.1
C512 0.1
C513 0.1
C514 0.1
C515 0.1
C517 0.1
C506 0.1
C507 0.1
5V
TP408 (A7)
1
3
TP40
(R RA
TP40
(R SC
SN74
IC
SN7


17
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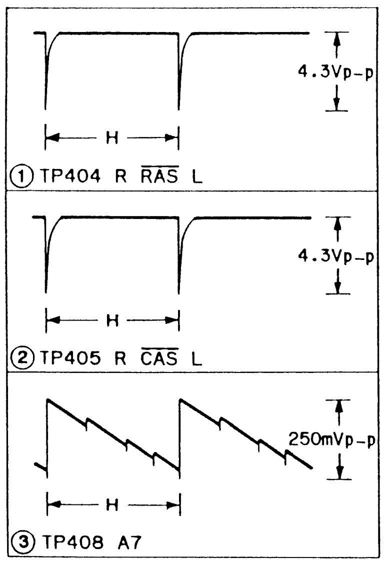
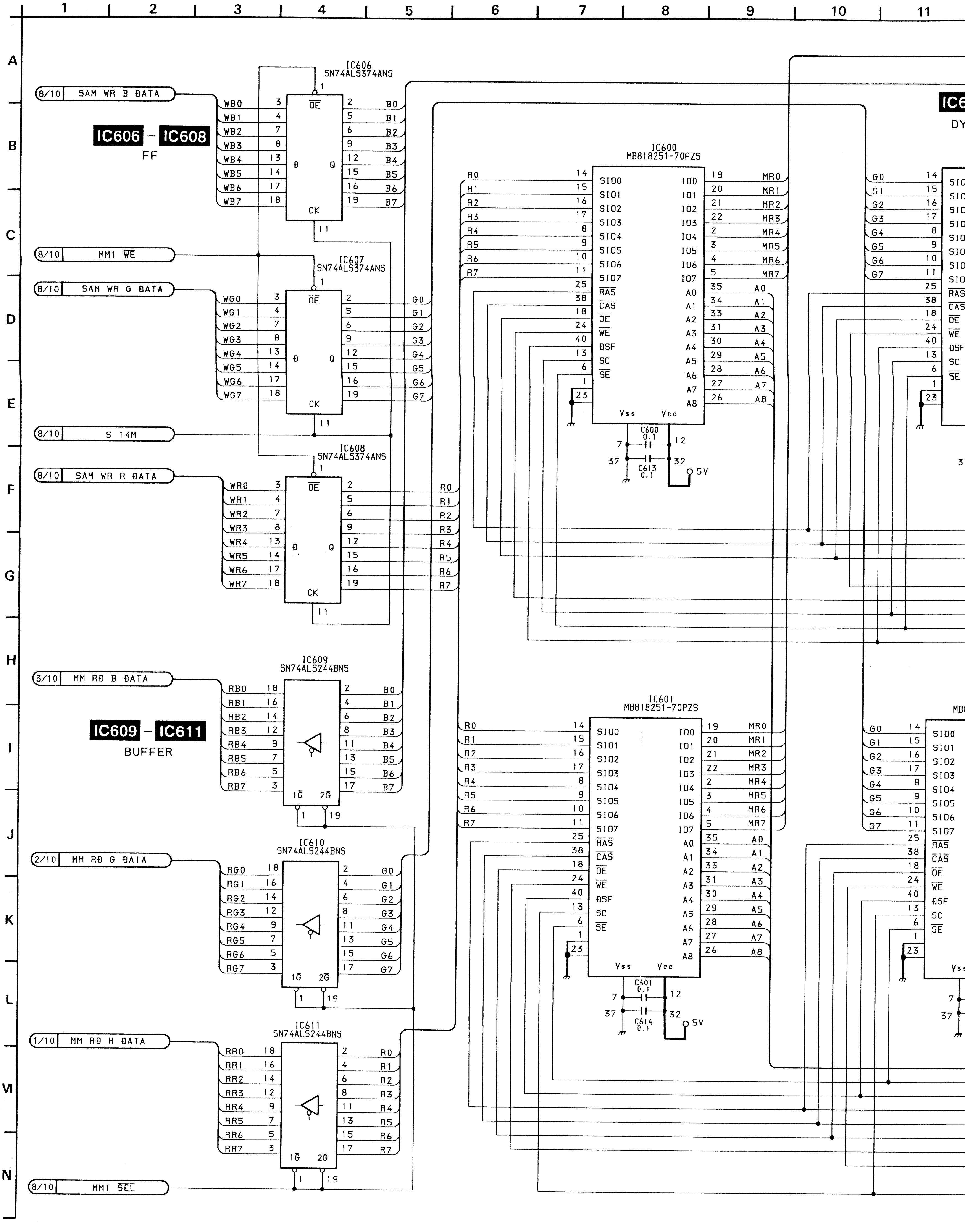
22
MEM. R DATA 8/10
MEM. G DATA 8/10
MEM. B DATA 8/10
MB0
MB1
MB2
MB3
MB4
MB5
MB6
MB7
A0
A1
A2
A3
A4
A5
A6
A7
A8
5V
C506 0.1
C507 0.1
C508 0.1
C509 0.1
C516 470 10V
C510 0.1
IC510 (3/8) SN74HC244ANS
IC510 (4/8) SN74HC244ANS
IC510 (5/8) SN74HC244ANS
IC510 (6/8) SN74HC244ANS
IC510 (7/8) SN74HC244ANS
IC510 (8/8) SN74HC244ANS
TP404 (R RAS L)
TP405 (R CAS L)
RM RAS L 8/10
RM CAS L 8/10
RM OE L 8/10
RM WE BL 8/10
RM WE GL 8/10
RM WE RL 8/10
RM SC L 8/10
RM SE L 8/10
RM DSF 8/10
TP406 (R SC L)
TP407 (R SE L)
RM SE U 8/10
IC509 SN74HC244ANS
MA0
MA1
MA2
MA3
MA4
MA5
MA6
MA7
MA8
IC509, IC510
BUFFER
TP408 (A7)
IC510 (1/8) SN74HC244ANS
MEM.ADDR 8/10
RM RAS U 8/10
RM CAS U 8/10
RM OE U 8/10
RM WE RU 8/10
RM WE GU 8/10
RM WE BU 8/10
RM SC U 8/10


4.3Vp-p
H
① TP404 R RAS L
4.3Vp-p
H
② TP405 R CAS L
250mVp-p
H
③ TP408 A7

ADA-33 — 10/10 — (FRAME MEMORY)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A
B
C
D
E
F
G
H
I
J
K
L
M
N
IC606 - IC608
FF
IC609 - IC611
BUFFER
IC606
SN74ALS374ANS
IC607
SN74ALS374ANS
IC608
SN74ALS374ANS
IC609
SN74ALS244BNS
IC610
SN74ALS244BNS
IC611
SN74ALS244BNS
IC600
MB818251-70PZS
IC601
MB818251-70PZS
8/10 SAM WR B DATA
8/10 MM1 WE
8/10 SAM WR G DATA
8/10 S 14M
8/10 SAM WR R DATA
3/10 MM RD B DATA
2/10 MM RD G DATA
1/10 MM RD R DATA
8/10 MM1 SEL
WB0
WB1
WB2
WB3
WB4
WB5
WB6
WB7
WG0
WG1
WG2
WG3
WG4
WG5
WG6
WG7
WR0
WR1
WR2
WR3
WR4
WR5
WR6
WR7
RB0
RB1
RB2
RB3
RB4
RB5
RB6
RB7
RG0
RG1
RG2
RG3
RG4
RG5
RG6
RG7
RR0
RR1
RR2
RR3
RR4
RR5
RR6
RR7
B0
B1
B2
B3
B4
B5
B6
B7
G0
G1
G2
G3
G4
G5
G6
G7
R0
R1
R2
R3
R4
R5
R6
R7
OE
D
Q
CK
1G
2G
SIO0
SIO1
SIO2
SIO3
SIO4
SIO5
SIO6
SIO7
RAS
CAS
OE
WE
DSF
SC
SE
IO0
IO1
IO2
IO3
IO4
IO5
IO6
IO7
A0
A1
A2
A3
A4
A5
A6
A7
A8
Vss
Vcc
MR0
MR1
MR2
MR3
MR4
MR5
MR6
MR7
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C613
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C601
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C614
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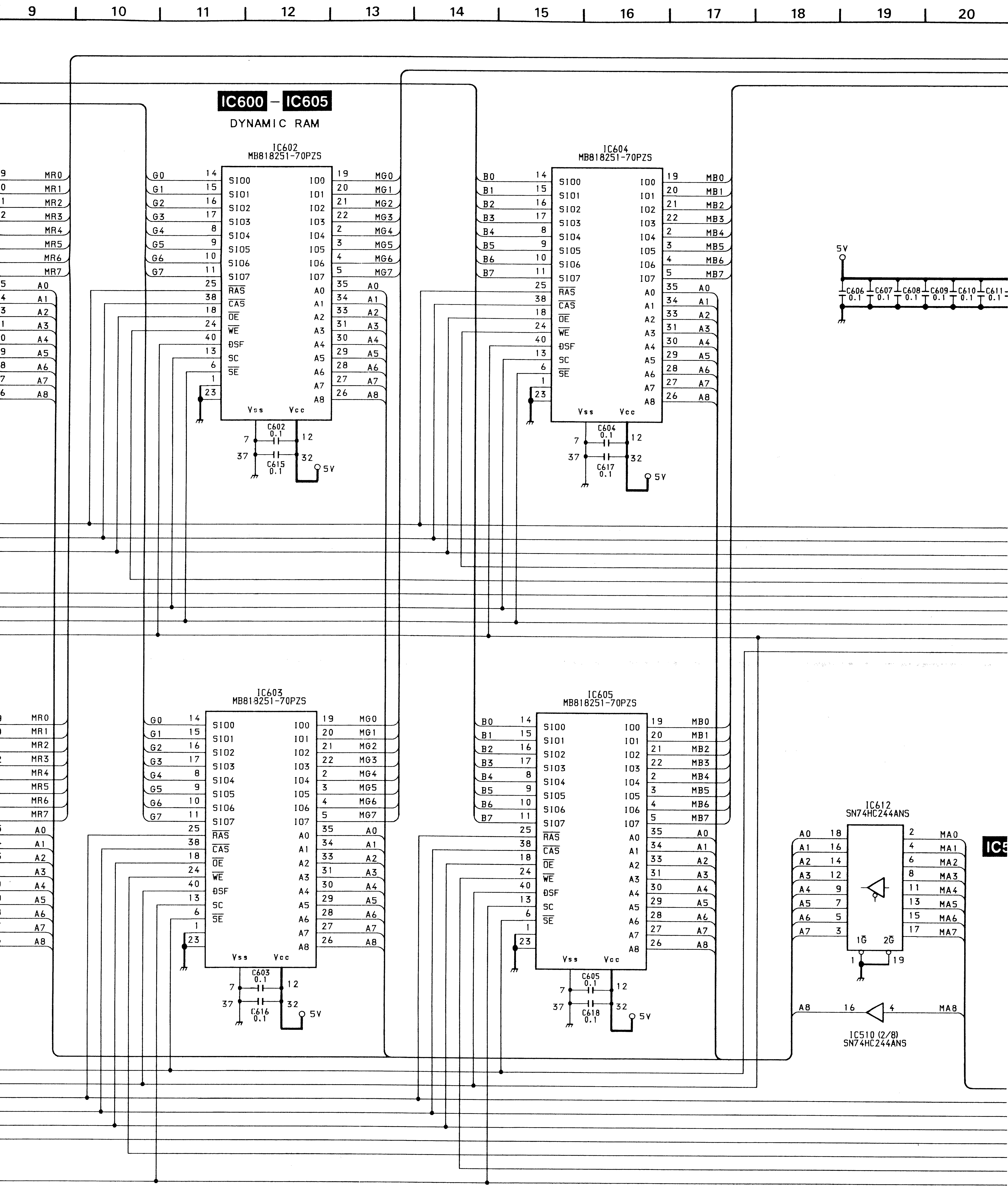
5V
MB8
IC6
DY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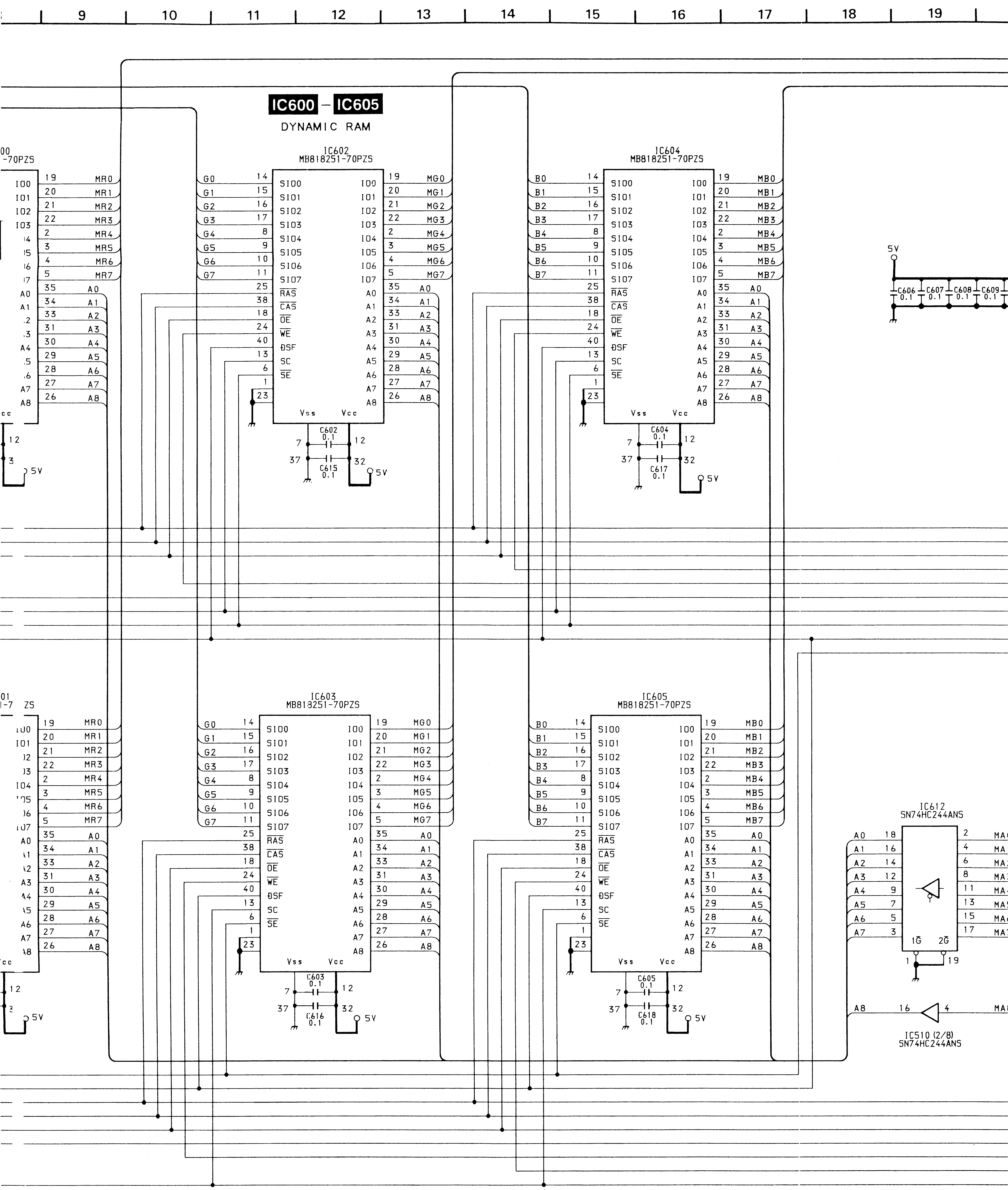
IC600 – IC605
DYNAMIC RAM
IC602
MB818251-70PZS
IC604
MB818251-70PZS
IC603
MB818251-70PZS
IC605
MB818251-70PZS
SIO0
SIO1
SIO2
SIO3
SIO4
SIO5
SIO6
SIO7
RAS
CAS
OE
WE
DSF
SC
SE
IO0
IO1
IO2
IO3
IO4
IO5
IO6
IO7
A0
A1
A2
A3
A4
A5
A6
A7
A8
Vss
Vcc
G0
G1
G2
G3
G4
G5
G6
G7
B0
B1
B2
B3
B4
B5
B6
B7
MR0
MR1
MR2
MR3
MR4
MR5
MR6
MR7
MG0
MG1
MG2
MG3
MG4
MG5
MG6
MG7
MB0
MB1
MB2
MB3
MB4
MB5
MB6
MB7
C602 0.1
C615 0.1
C604 0.1
C617 0.1
C603 0.1
C616 0.1
C605 0.1
C618 0.1
5V
C606 0.1
C607 0.1
C608 0.1
C609 0.1
C610 0.1
C611 0.1
IC612
SN74HC244ANS
MA0
MA1
MA2
MA3
MA4
MA5
MA6
MA7
MA8
1G
2G
IC510 (2/8)
SN74HC244ANS
IC5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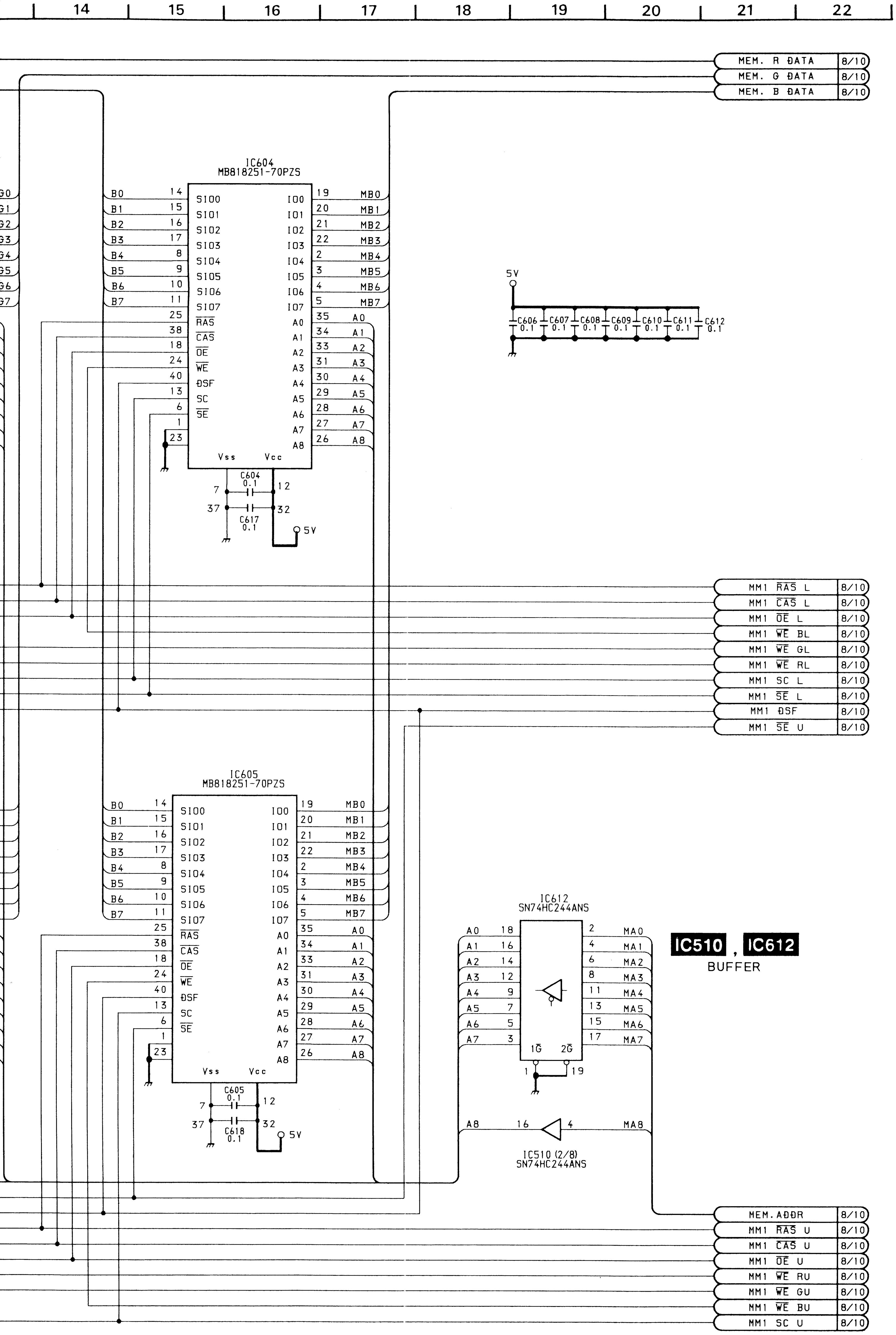
IC600 - IC605
DYNAMIC RAM
IC602
MB818251-70PZS
IC603
MB818251-70PZS
IC604
MB818251-70PZS
IC605
MB818251-70PZS
SIO0
SIO1
SIO2
SIO3
SIO4
SIO5
SIO6
SIO7
RAS
CAS
OE
WE
DSF
SC
SE
IO0
IO1
IO2
IO3
IO4
IO5
IO6
IO7
A0
A1
A2
A3
A4
A5
A6
A7
A8
Vss
Vcc
G0
G1
G2
G3
G4
G5
G6
G7
B0
B1
B2
B3
B4
B5
B6
B7
MR0
MR1
MR2
MR3
MR4
MR5
MR6
MR7
MG0
MG1
MG2
MG3
MG4
MG5
MG6
MG7
MB0
MB1
MB2
MB3
MB4
MB5
MB6
MB7
C602 0.1
C615 0.1
C603 0.1
C616 0.1
C604 0.1
C617 0.1
C605 0.1
C618 0.1
5V
C606 0.1
C607 0.1
C608 0.1
C609 0.1
IC612
SN74HC244ANS
1G
2G
IC510 (2/8)
SN74HC244ANS
MA



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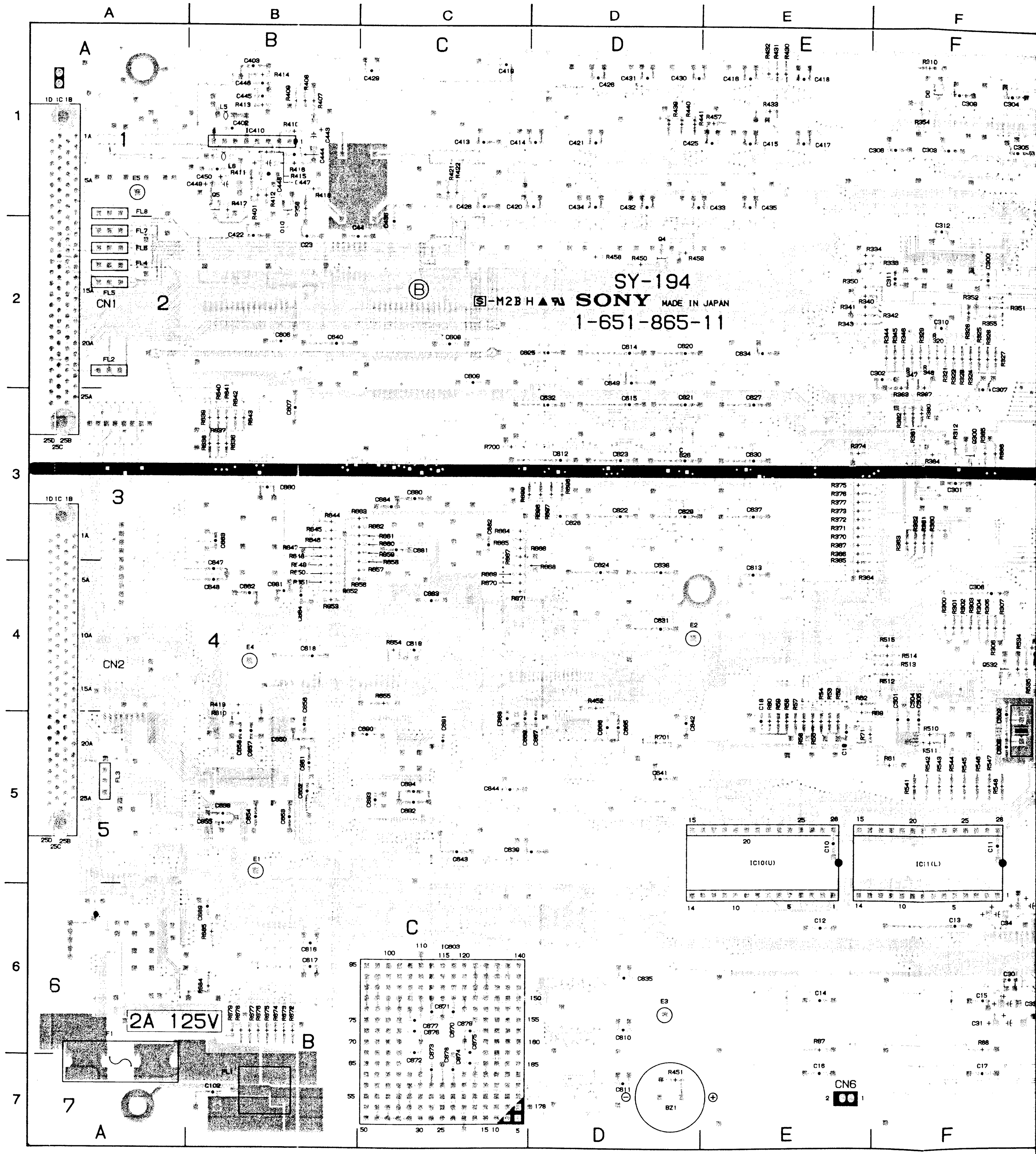
MEM. R DATA 8/10
MEM. G DATA 8/10
MEM. B DATA 8/10
IC604
MB818251-70PZS
IC605
MB818251-70PZS
SIO0 SIO1 SIO2 SIO3 SIO4 SIO5 SIO6 SIO7
IO0 IO1 IO2 IO3 IO4 IO5 IO6 IO7
B0 B1 B2 B3 B4 B5 B6 B7
MB0 MB1 MB2 MB3 MB4 MB5 MB6 MB7
A0 A1 A2 A3 A4 A5 A6 A7 A8
RAS CAS OE WE DSF SC SE
Vss Vcc
C604 0.1
C617 0.1
C605 0.1
C618 0.1
5V
C606 0.1
C607 0.1
C608 0.1
C609 0.1
C610 0.1
C611 0.1
C612 0.1
MM1 RAS L 8/10
MM1 CAS L 8/10
MM1 OE L 8/10
MM1 WE BL 8/10
MM1 WE GL 8/10
MM1 WE RL 8/10
MM1 SC L 8/10
MM1 SE L 8/10
MM1 DSF 8/10
MM1 SE U 8/10
IC612
SN74HC244ANS
MA0 MA1 MA2 MA3 MA4 MA5 MA6 MA7 MA8
1G 2G
IC510 (2/8)
SN74HC244ANS
IC510 , IC612
BUFFER
MEM.ADDR 8/10
MM1 RAS U 8/10
MM1 CAS U 8/10
MM1 OE U 8/10
MM1 WE RU 8/10
MM1 WE GU 8/10
MM1 WE BU 8/10
MM1 SC U 8/10

SY-194 (SYSTEM PROCESS)

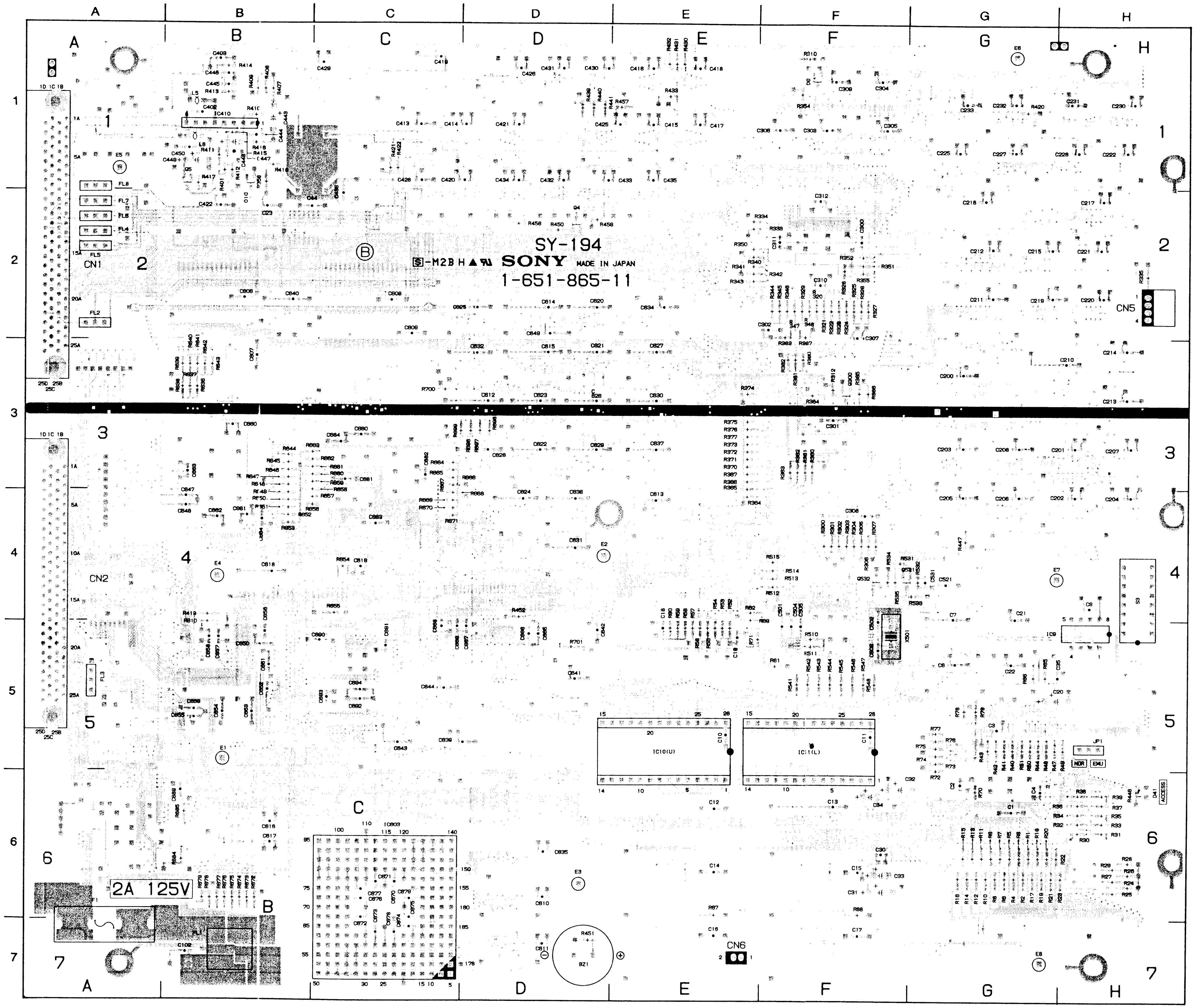
SY-194(1-651-865-11)

BZ1	D-7	IC231	H-1	IC624	D-4
		IC232	G-1	IC625	D-2
CN1	A-3	IC233	G-1	IC626	D-3
CN2	A-5	IC300	F-2	IC627	E-3
CN5	H-2	IC301	F-3	IC628	D-3
		IC302	F-3	IC629	D-3
*D9	F-1	IC303	F-1	IC630	E-3
*D10	B-1	IC304	F-1	IC631	D-4
D41	H-6	IC305	F-1	IC632	D-3
		IC306	F-1	IC633	A-5
FB1	H-2	IC307	F-3	IC634	E-2
		IC308	F-4	IC635	D-6
FL1	B-7	IC309	F-1	IC636	C-5
FL2	A-2	IC400	A-1	IC637	E-3
FL3	A-5	IC401	A-1	IC638	D-4
FL4	A-2	IC402	B-1	IC639	C-5
FL5	A-2	IC403	B-1	IC640	B-2
FL6	A-2	IC404	A-1	IC641	D-5
FL7	A-2	IC410	B-1	IC642	D-5
FL8	A-1	IC411	B-1	IC643	C-5
		IC412	B-1	IC644	C-5
F1	A-7	IC413	C-1	IC645	A-4
		IC414	C-1	IC646	A-5
IC1	G-6	IC415	E-1		
IC6	G-5	IC416	E-1	*Q4	D-2
IC7	G-5	IC417	E-1	*Q5	B-1
IC9	H-5	IC418	E-1	*Q300	F-3
IC10	E-5	IC419	C-1	*Q531	F-4
IC11	F-5	IC420	C-2	*Q532	F-4
IC12	E-6	IC421	D-1		
IC13	F-6	IC422	B-2	RV1	B-1
IC14	E-6	IC425	D-1		
IC15	F-6	IC426	D-1	S1	H-5
IC16	E-7	IC428	C-2		
IC17	F-7	IC429	B-1	TP1	A-7
IC18	E-5	IC430	D-1	TP2	C-1
IC20	G-5	IC431	D-1	TP3	E-1
IC21	G-5	IC432	D-2		
IC22	G-5	IC433	D-2	TP600	A-4
IC23	B-2	IC434	D-2	TP601	A-4
IC30	F-6	IC435	E-2	TP602	A-4
IC44	B-2	IC501	F-4	TP603	A-4
IC200	G-3	IC521	G-4	TP604	D-5
IC201	H-3	IC600	B-5	TP605	C-5
IC202	H-4	IC601	B-3	TP606	C-4
IC203	G-3	IC602	D-5	TP607	C-4
IC204	H-4	IC603	C-6	TP608	C-4
IC205	G-4	IC604	C-3	TP609	C-4
IC206	G-4	IC605	A-6	TP610	C-4
IC207	H-3	IC606	B-2	TP611	A-5
IC208	G-3	IC607	B-3	TP612	A-5
IC210	G-3	IC608	C-2	TP613	B-6
IC211	G-2	IC609	C-3		
IC212	G-2	IC610	D-6	X1	B-1
IC213	H-3	IC611	D-7	X501	F-5
IC214	H-3	IC612	D-3		
IC215	G-2	IC613	E-4		
IC217	H-2	IC614	D-2		
IC218	G-2	IC615	D-3		
IC219	G-2	IC616	B-6		
IC220	H-2	IC617	B-6		
IC221	H-2	IC618	B-4		
IC222	H-1	IC619	C-4		
IC225	G-1	IC620	D-2		
IC227	G-1	IC621	D-3		
IC228	H-1	IC622	D-3		
IC230	H-1	IC623	D-3		

* : Soldering side

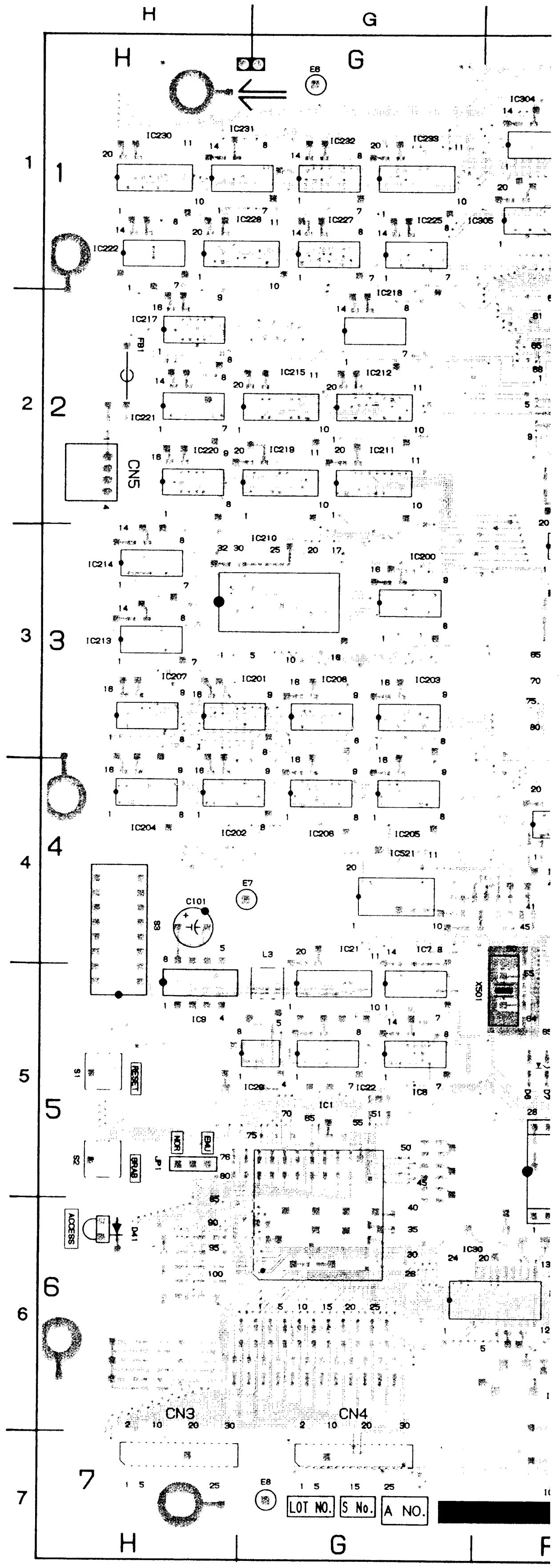


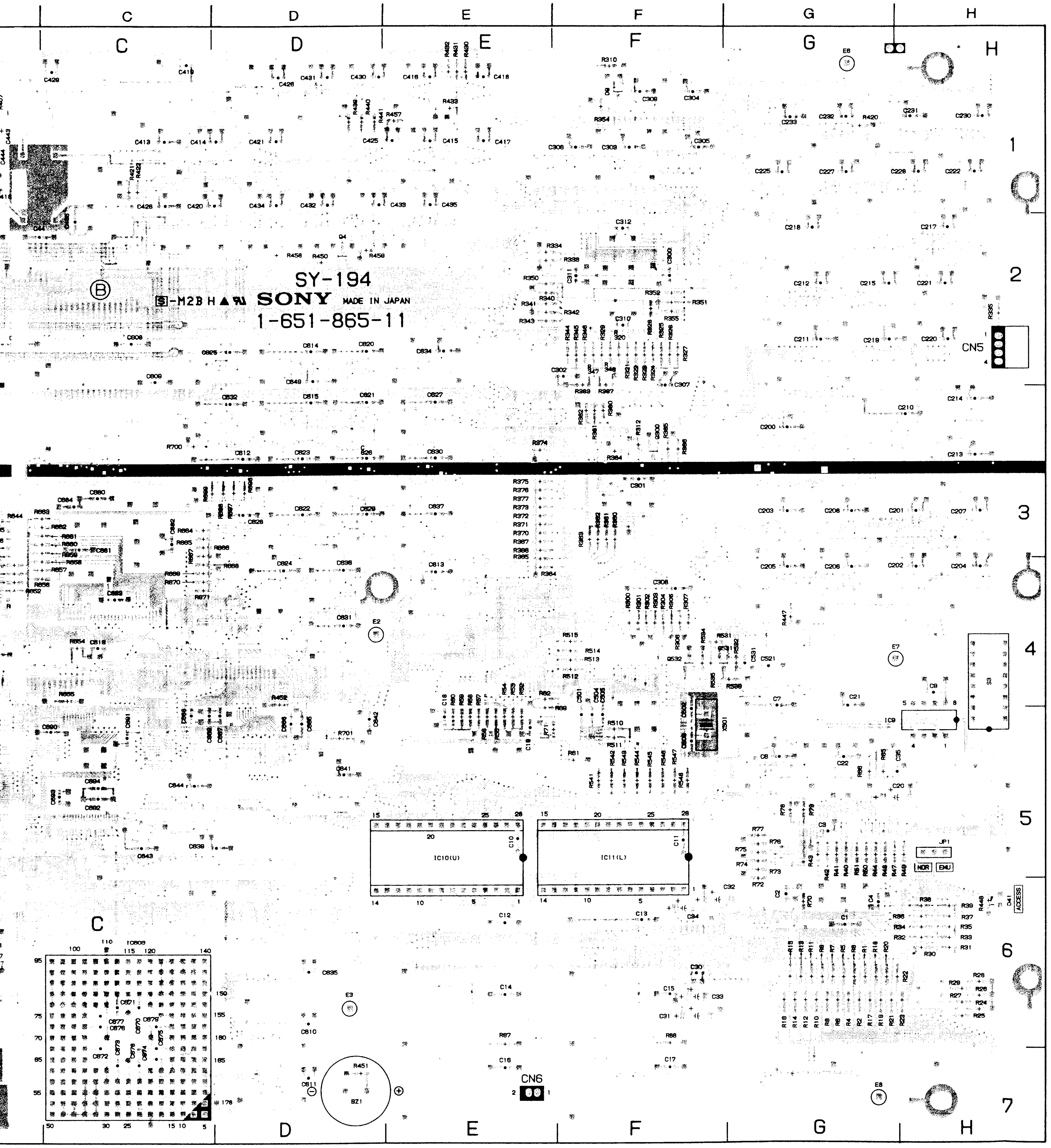
624	D-4
625	D-2
626	D-3
627	E-3
628	D-3
629	D-3
630	E-3
631	D-4
632	D-3
633	A-5
634	E-2
635	D-6
636	C-5
637	E-3
638	D-4
639	C-5
640	B-2
641	D-5
642	D-5
643	C-5
644	C-5
645	A-4
646	A-5
4	D-2
5	B-1
300	F-3
531	F-4
532	F-4
/1	B-1
	H-5
1	A-7
2	C-1
3	E-1
600	A-4
601	A-4
602	A-4
603	A-4
604	D-5
605	C-5
606	C-4
607	C-4
608	C-4
609	C-4
610	C-4
611	A-5
612	A-5
613	B-6
	B-1
01	F-5


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
SY-194
SONY MADE IN JAPAN
1-651-865-11
CN1
CN2
CN5
CN6
IC10(U)
IC11(L)
IC603
2A 125V
BZ1
FL2
FL3
FL4
FL5
FL6
FL7
FL8
E1
E2
E3
E4
E5
E6
E7
E8
S3
IC9
JP1
ACCESS

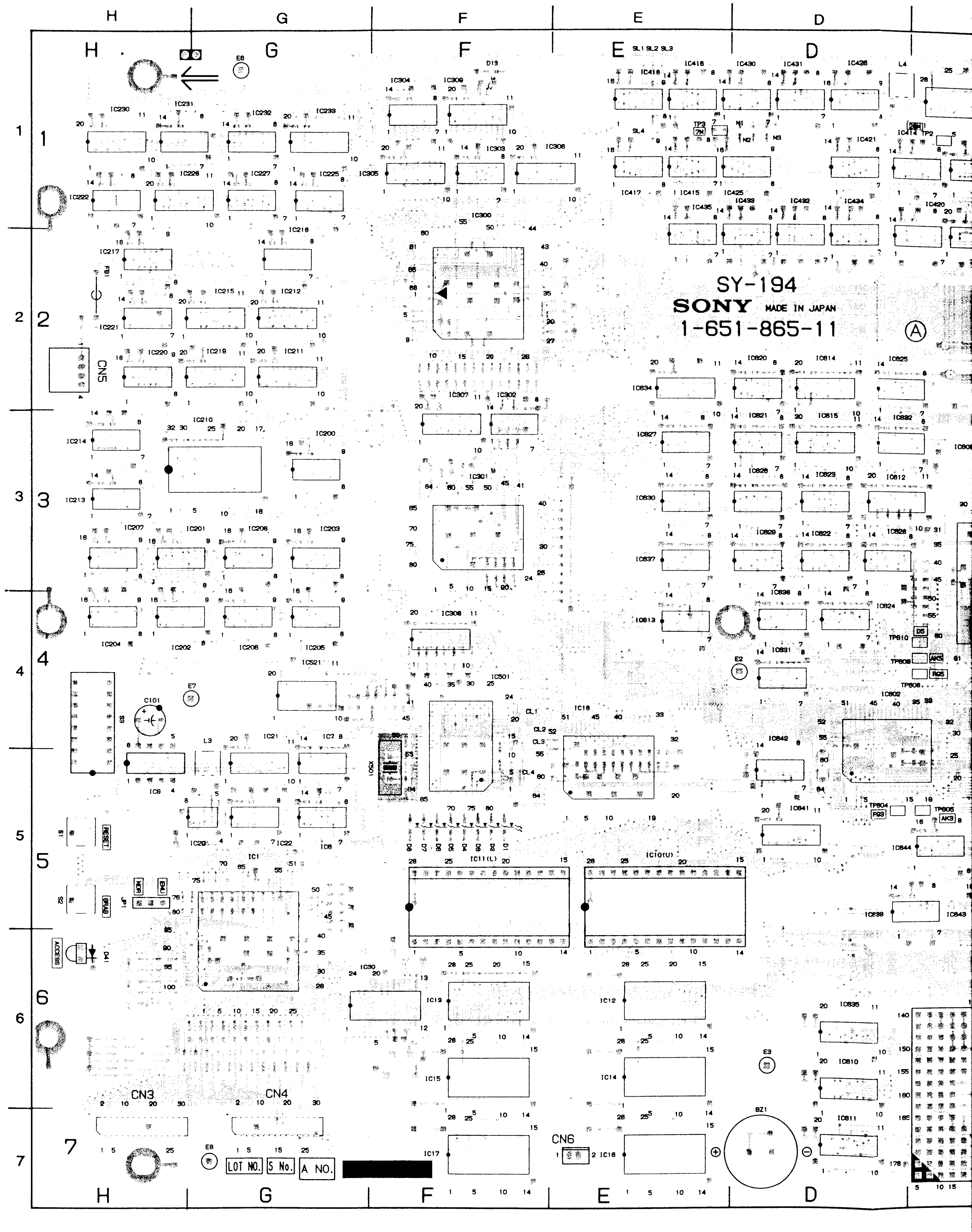
SY-194 —SOLDERING SIDE—

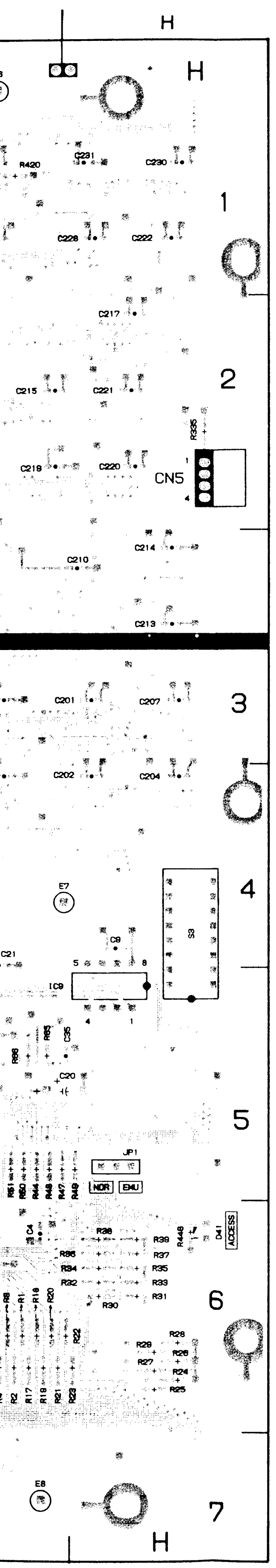
1-651-865-11


H
G
1
2
3
4
5
6
7
CN3
CN4
CN5
IC1
IC9
C101
L3
LOT NO.
S No.
A NO.

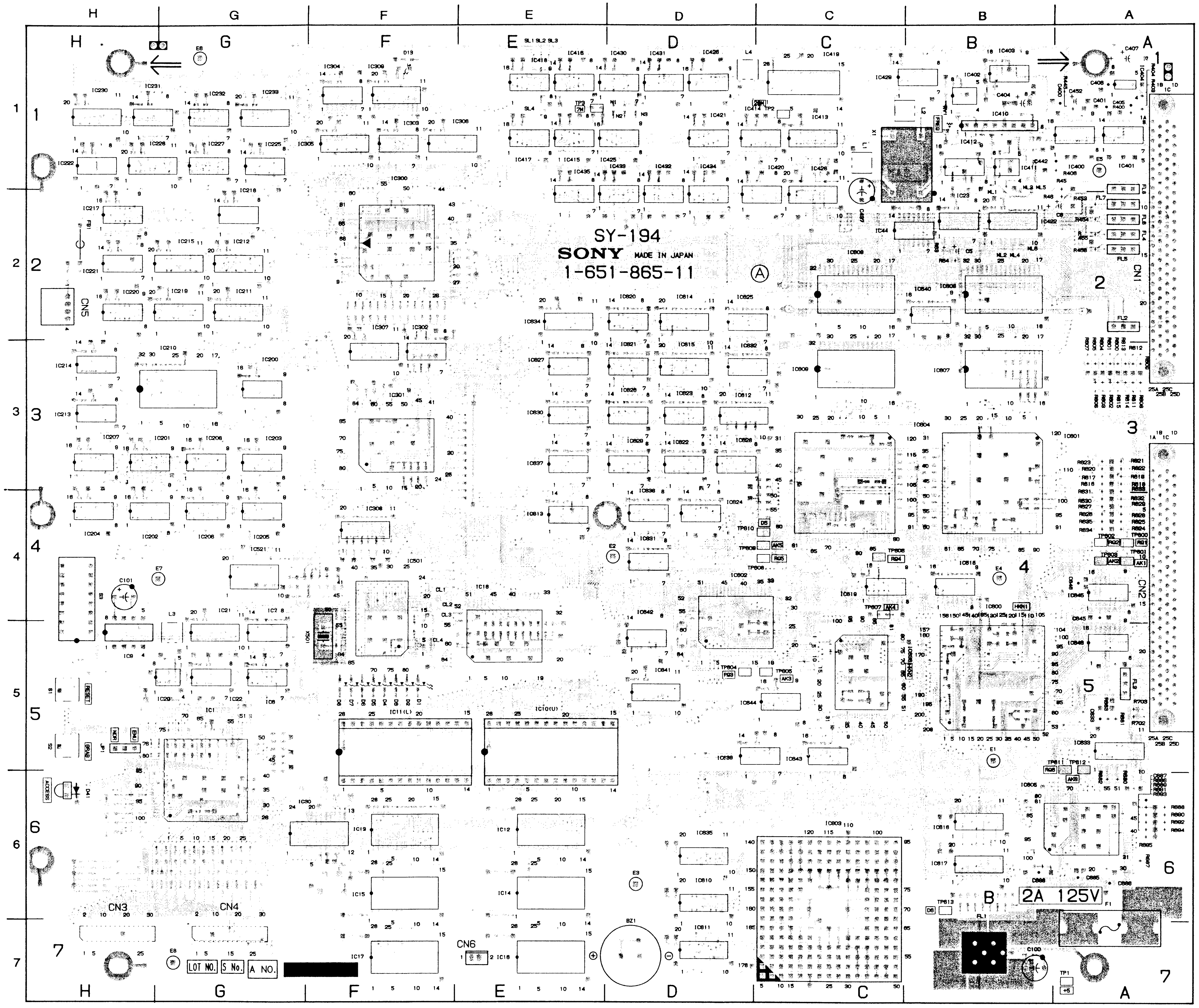

C
D
E
F
G
H
1
2
3
4
5
6
7
SY-194
SONY MADE IN JAPAN
1-651-865-11
Ⓑ
CN5
CN6
IC10(U)
IC11(L)
JP1
NOR
EMU
ACCESS
BZ1
E2
E3
E7
E8

SY-194 —SOLDERING SIDE—
1-651-865-11


H
G
F
E
D
1
2
3
4
5
6
7
SY-194
SONY MADE IN JAPAN
1-651-865-11
Ⓐ
CN3
CN4
CN5
CN6
IC10(U)
IC11(L)
RESET
ACCESS
BZ1
LOT NO.
S No.
A NO.

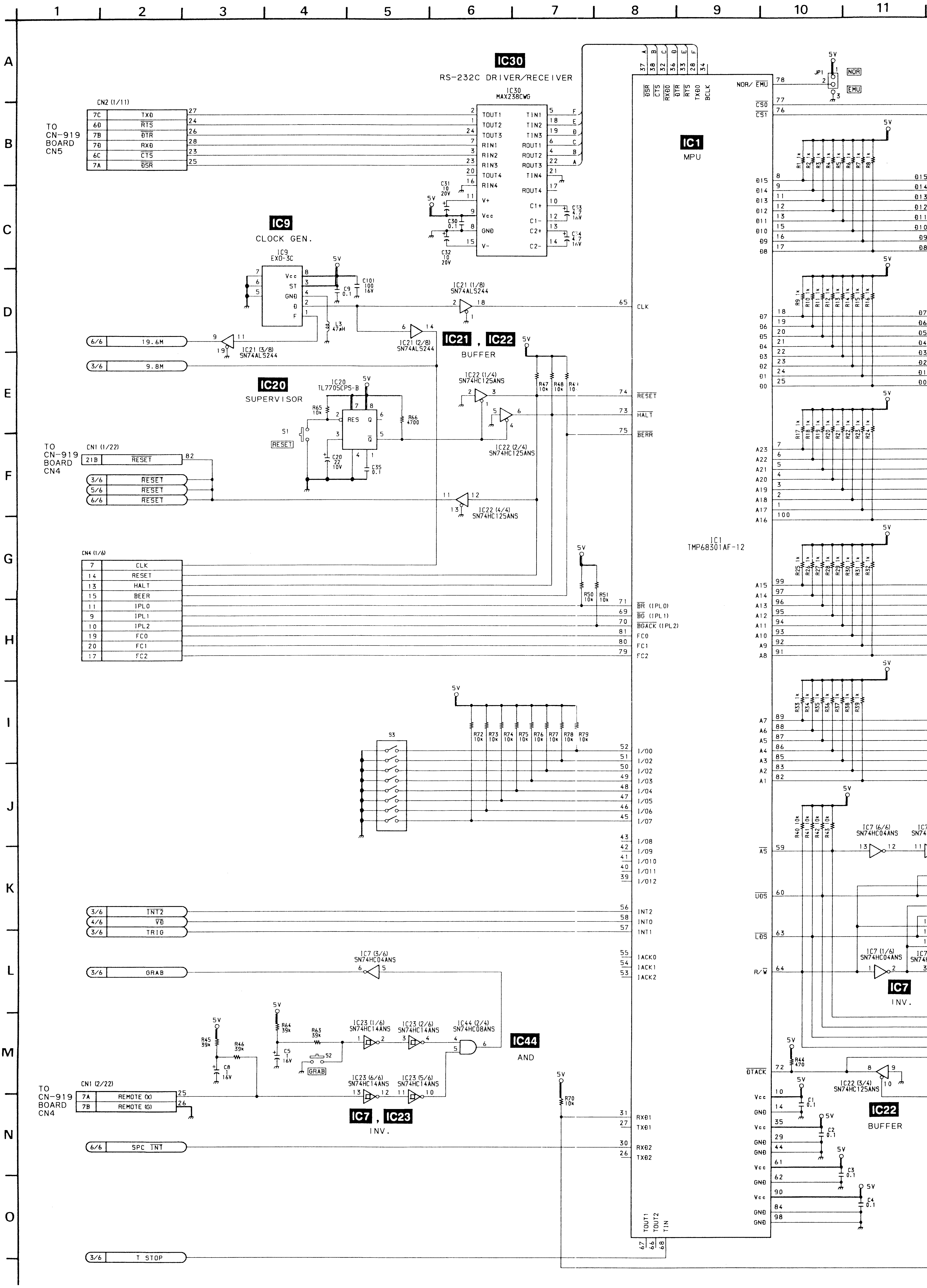

H
CN5
CN3
1
2
3
4
5
6
7

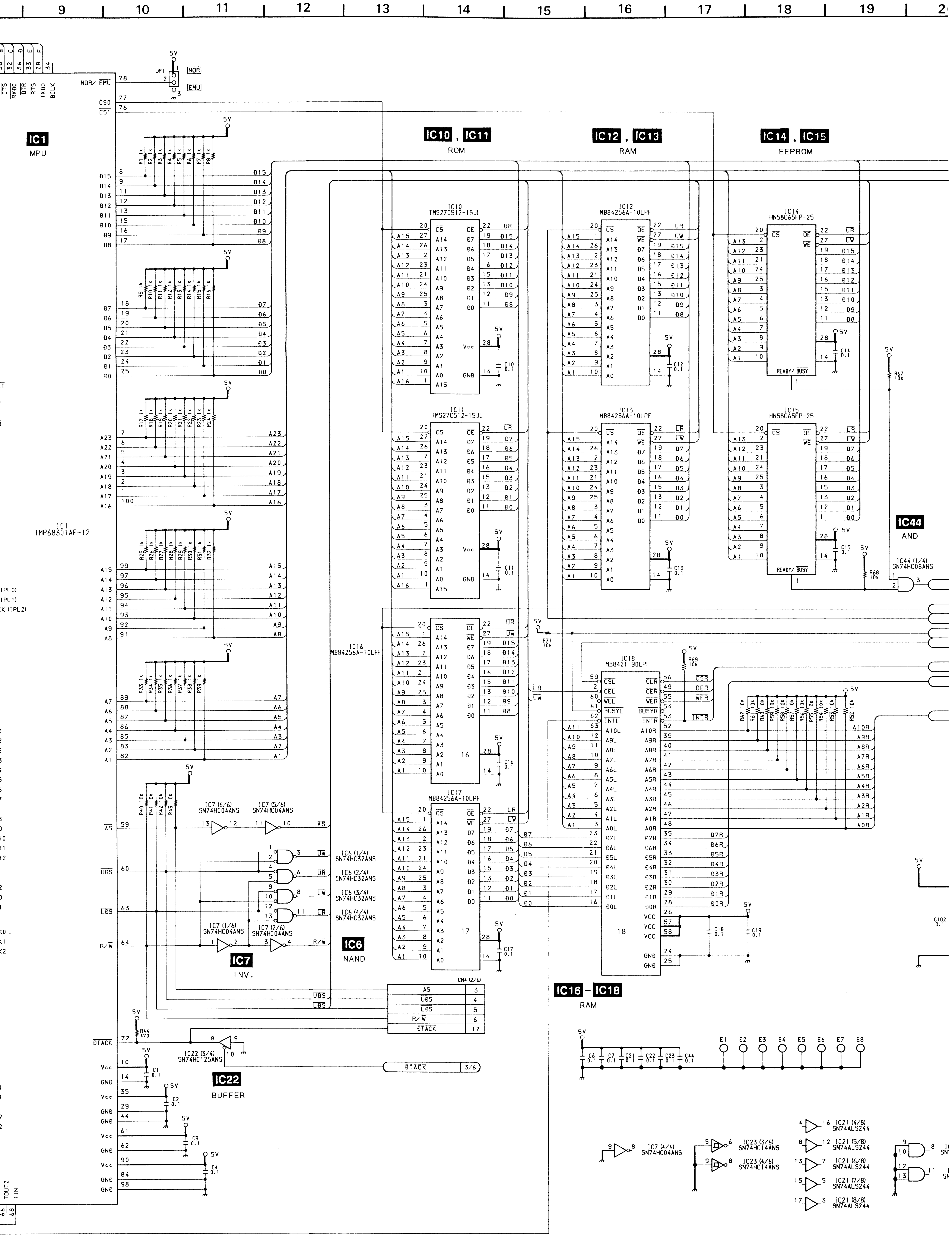
—SOLDERING SIDE—

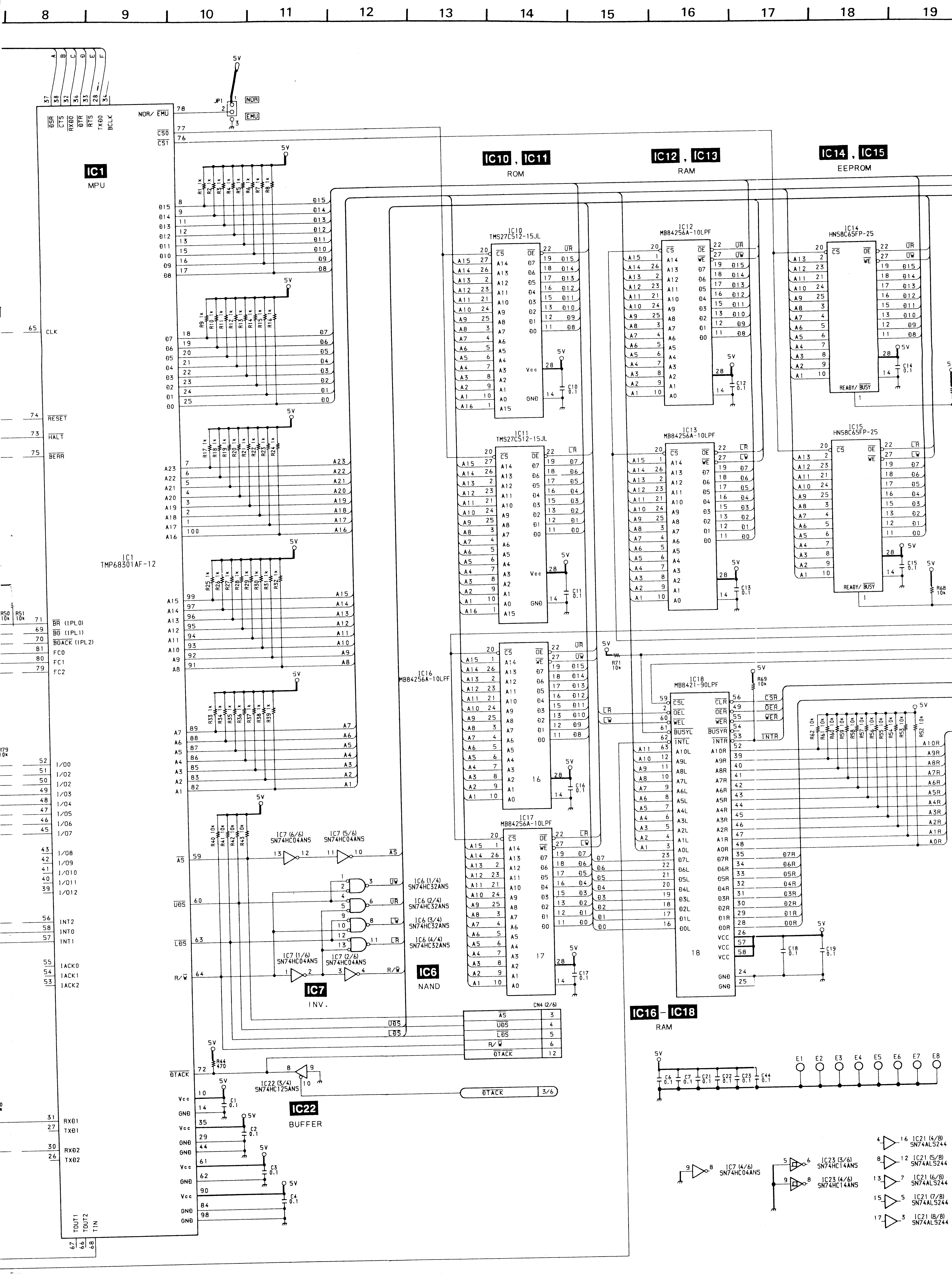

H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
SY-194
SONY MADE IN JAPAN
1-651-865-11
Ⓐ
CN1
CN2
CN3
CN4
CN5
CN6
BZ1
2A 125V
F1
LOT NO.
S No.
A NO.
ACCESS

SY-194 —COMPONENT SIDE—
1-651-865-11

SY-194 — 1/6 — (SYSTEM PROCESS)


IC30
RS-232C DRIVER/RECEIVER
IC30 MAX238CWG
IC1
MPU
IC1 TMP68301AF-12
IC9
CLOCK GEN.
IC9 EXO-3C
IC21 , IC22
BUFFER
IC20
SUPERVISOR
IC20 TL7705CPS-B
IC7
INV.
IC44
AND
IC7 , IC23
INV.
IC22
BUFFER
TO CN-919 BOARD CN5
TO CN-919 BOARD CN4
CN2 (1/11)
CN1 (1/22)
CN1 (2/22)
CN4 (1/6)
TXD
RTS
DTR
RXD
CTS
DSR
19.6M
9.8M
RESET
CLK
HALT
BEER
IPL0
IPL1
IPL2
FC0
FC1
FC2
INT2
VD
TRIG
GRAB
REMOTE (X)
REMOTE (G)
SPC INT
T STOP
S1
S2
S3
NOR/EMU
NOR
EMU
JP1
5V
BR (IPL0)
BG (IPL1)
BGACK (IPL2)
DTACK
AS
UDS
LDS
R/W
RESET
HALT
BERR
RXD1
TXD1
RXD2
TXD2
INT2
INT0
INT1
IACK0
IACK1
IACK2
SN74ALS244
SN74HC125ANS
SN74HC04ANS
SN74HC14ANS
SN74HC08ANS


9
10
11
12
13
14
15
16
17
18
19
IC1
MPU
IC1
TMP68301AF-12
NOR/ EMU
CS0
CS1
JP1
NOR
EMU
5V
IC10 , IC11
ROM
IC10
TMS27C512-15JL
IC11
TMS27C512-15JL
IC12 , IC13
RAM
IC12
MB84256A-10LPF
IC13
MB84256A-10LPF
IC14 , IC15
EEPROM
IC14
HN58C65FP-25
IC15
HN58C65FP-25
READY/ BUSY
R67 10k
R68 10k
IC44
AND
IC44 (1/4)
SN74HC08ANS
IC16
MB84256A-10LFF
IC17
MB84256A-10LPF
IC18
MB8421-90LPF
R69 10k
R71 10k
IC16 - IC18
RAM
IC6 (1/4) SN74HC32ANS
IC6 (2/4) SN74HC32ANS
IC6 (3/4) SN74HC32ANS
IC6 (4/4) SN74HC32ANS
IC6
NAND
IC7 (6/6) SN74HC04ANS
IC7 (5/6) SN74HC04ANS
IC7 (1/6) SN74HC04ANS
IC7 (2/6) SN74HC04ANS
IC7
INV.
IC22 (3/4)
SN74HC125ANS
IC22
BUFFER
R44 470
CN4 (2/6)
AS 3
UDS 4
LDS 5
R/W 6
DTACK 12
DTACK 3/6
E1 E2 E3 E4 E5 E6 E7 E8
C6 0.1 C7 0.1 C21 0.1 C22 0.1 C23 0.1 C44 0.1
IC7 (4/6) SN74HC04ANS
IC23 (3/6) SN74HC14ANS
IC23 (4/6) SN74HC14ANS
IC21 (4/8) SN74ALS244
IC21 (5/8) SN74ALS244
IC21 (6/8) SN74ALS244
IC21 (7/8) SN74ALS244
IC21 (8/8) SN74ALS244
C102 0.1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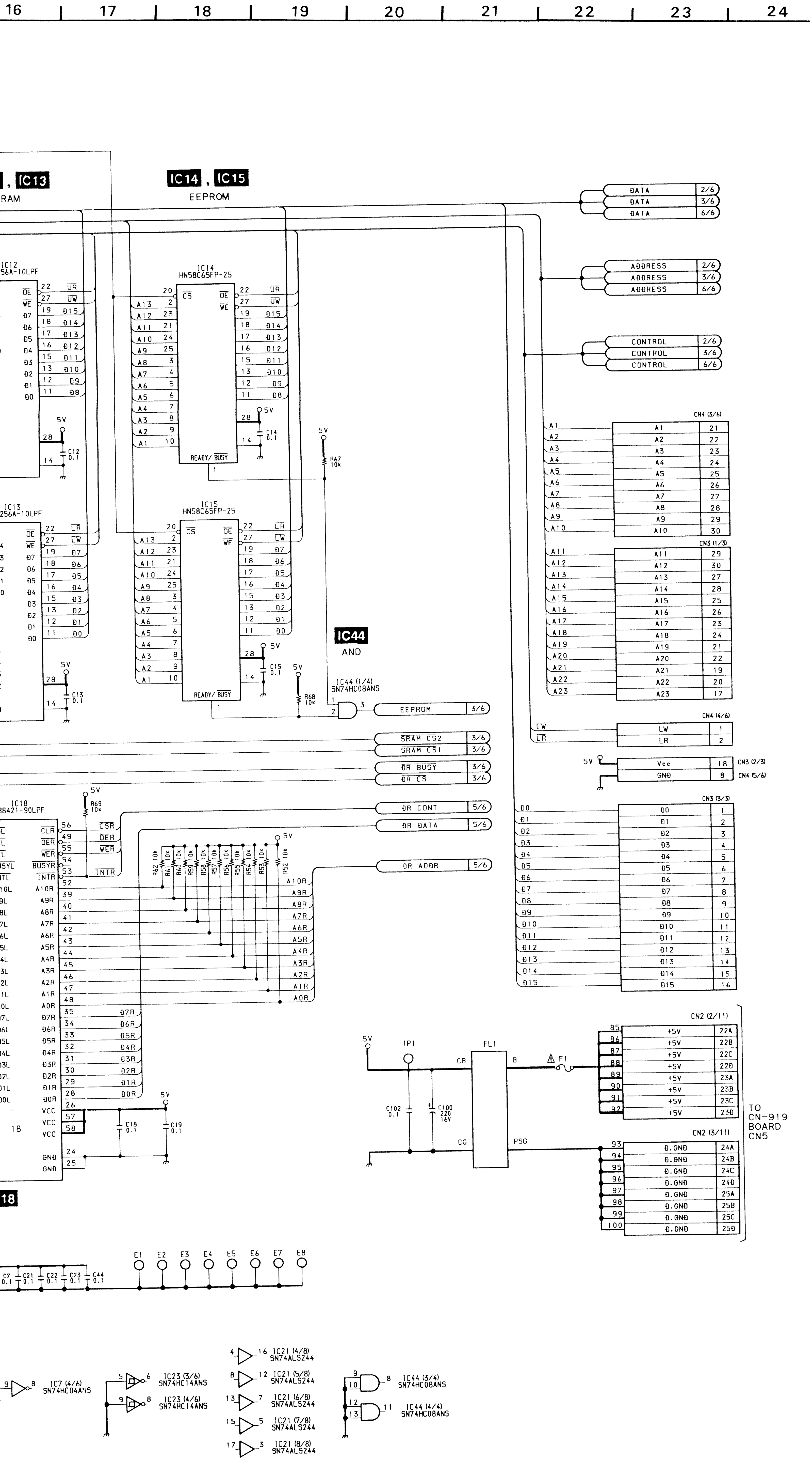
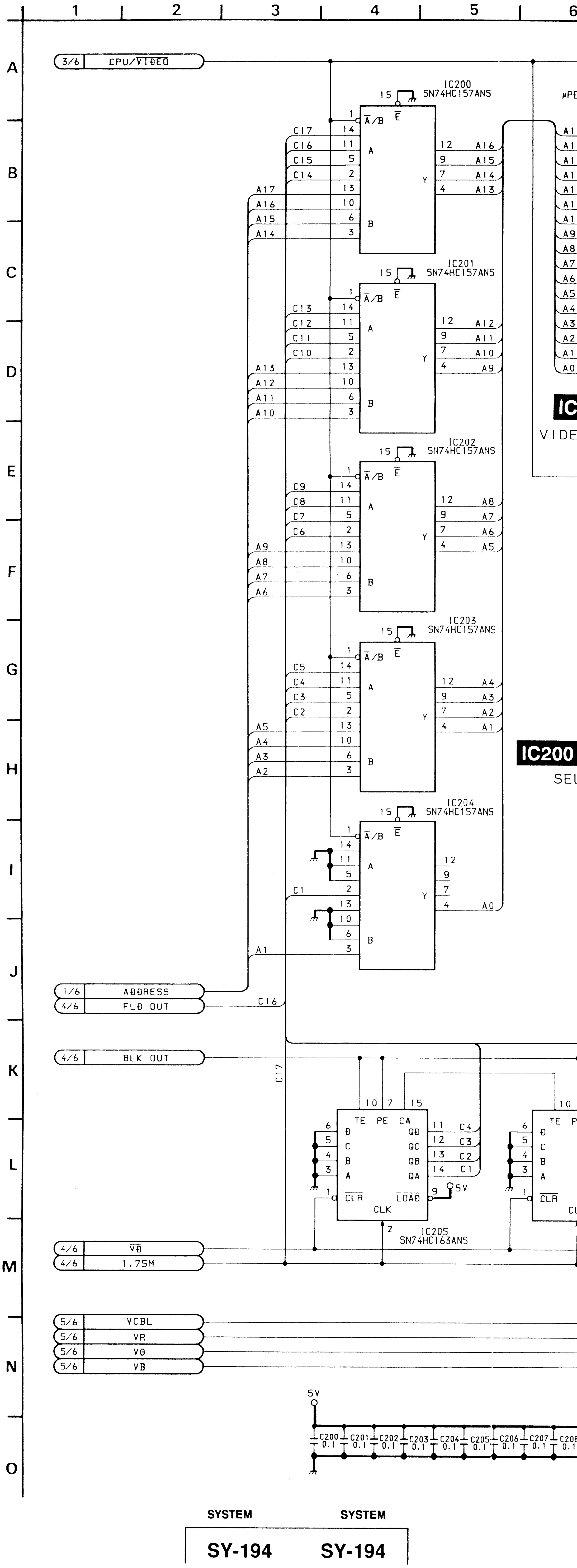
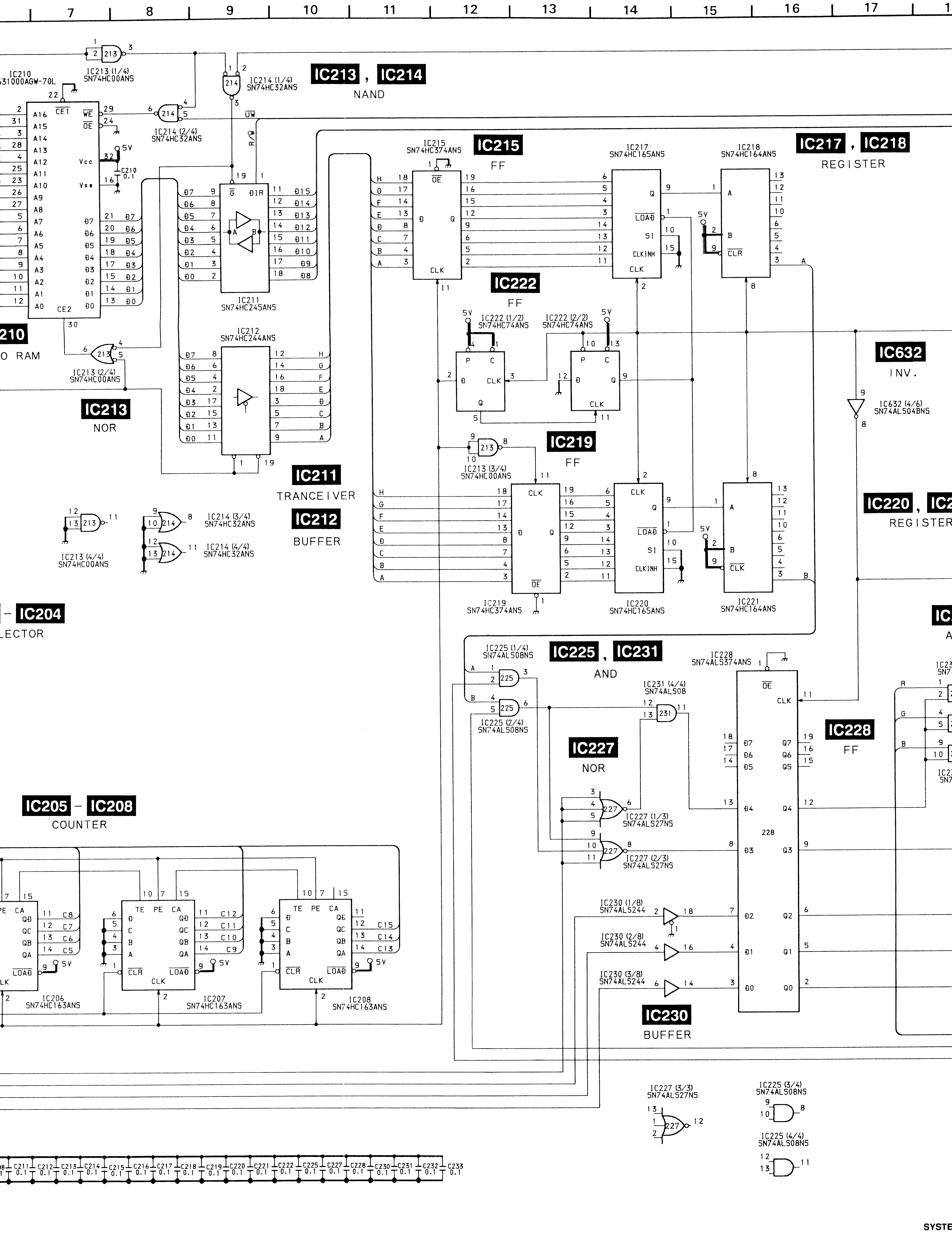
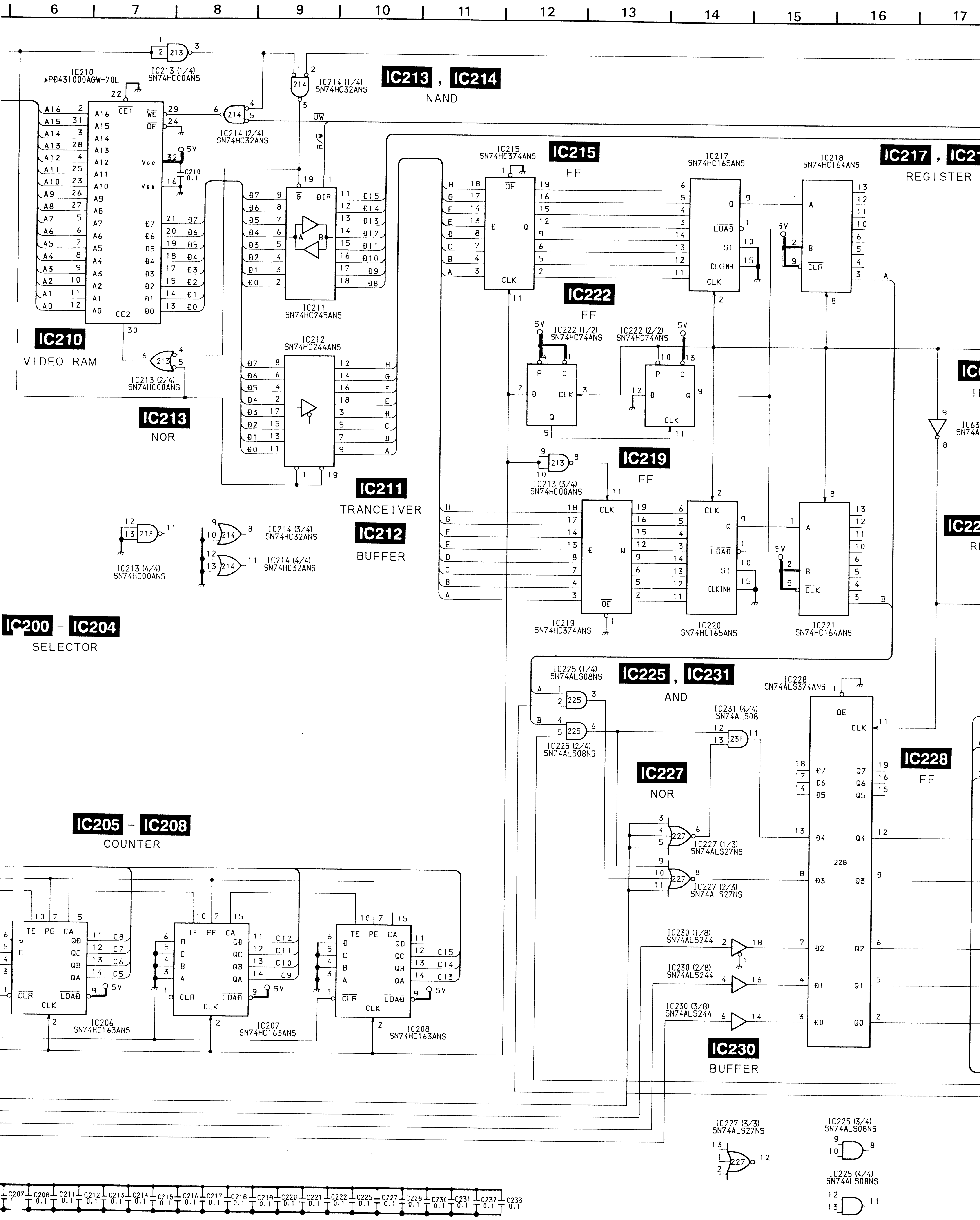
9
10
11
12
13
14
15
16
17
18
19
IC1
MPU
IC1
TMP68301AF-12
IC10 , IC11
ROM
IC10
TMS27C512-15JL
IC11
TMS27C512-15JL
IC12 , IC13
RAM
IC12
MB84256A-10LPF
IC13
MB84256A-10LPF
IC14 , IC15
EEPROM
IC14
HN58C65FP-25
IC15
HN58C65FP-25
READY/ BUSY
IC16
MB84256A-10LFF
IC17
MB84256A-10LPF
IC18
MB8421-90LPF
IC16 - IC18
RAM
IC6
NAND
IC6 (1/4) SN74HC32ANS
IC6 (2/4) SN74HC32ANS
IC6 (3/4) SN74HC32ANS
IC6 (4/4) SN74HC32ANS
IC7
INV.
IC7 (6/6) SN74HC04ANS
IC7 (5/6) SN74HC04ANS
IC7 (1/6) SN74HC04ANS
IC7 (2/6) SN74HC04ANS
IC7 (4/6) SN74HC04ANS
IC22
BUFFER
IC22 (3/4) SN74HC125ANS
IC23 (3/6) SN74HC14ANS
IC23 (4/6) SN74HC14ANS
IC21 (4/8) SN74ALS244
IC21 (5/8) SN74ALS244
IC21 (6/8) SN74ALS244
IC21 (7/8) SN74ALS244
IC21 (8/8) SN74ALS244
JP1
NOR
EMU
NOR/ EMU
CS0
CS1
DSR
CTS
RXD0
DTR
RTS
TXD0
BCLK
CLK
RESET
HALT
BERR
BR (IPL0)
BG (IPL1)
BGACK (IPL2)
FC0
FC1
FC2
I/00
I/01
I/02
I/03
I/04
I/05
I/06
I/07
I/08
I/09
I/010
I/011
I/012
INT2
INT0
INT1
IACK0
IACK1
IACK2
RXD1
TXD1
RXD2
TXD2
TOUT1
TOUT2
TIN
AS
UDS
LDS
R/W
DTACK
UW
UR
LW
LR
CN4 (2/6)
DTACK 3/6
5V
R44 470
E1
E2
E3
E4
E5
E6
E7
E8


16
17
18
19
20
21
22
23
24
IC13
RAM
IC14, IC15
EEPROM
IC12
IC13
IC14
HN58C65FP-25
IC15
HN58C65FP-25
READY/ BUSY
DATA 2/6
DATA 3/6
DATA 6/6
ADDRESS 2/6
ADDRESS 3/6
ADDRESS 6/6
CONTROL 2/6
CONTROL 3/6
CONTROL 6/6
CN4 (3/6)
CN3 (1/3)
CN4 (4/6)
CN3 (2/3)
CN4 (5/6)
CN3 (3/3)
IC44
AND
IC44 (1/4)
SN74HC08ANS
EEPROM 3/6
SRAM CS2 3/6
SRAM CS1 3/6
DR BUSY 3/6
DR CS 3/6
DR CONT 5/6
DR DATA 5/6
DR ADDR 5/6
IC18
5V
R67 10k
R68 10k
R69 10k
C12 0.1
C13 0.1
C14 0.1
C15 0.1
C18 0.1
C19 0.1
TP1
FL1
CB
CG
B
PSG
F1
C102 0.1
C100 220 16V
CN2 (2/11)
CN2 (3/11)
+5V
D.GND
TO CN-919 BOARD CN5
E1
E2
E3
E4
E5
E6
E7
E8
C7 0.1
C21 0.1
C22 0.1
C23 0.1
C44 0.1
IC7 (4/6) SN74HC04ANS
IC23 (3/6) SN74HC14ANS
IC23 (4/6) SN74HC14ANS
IC21 (4/8) SN74ALS244
IC21 (5/8) SN74ALS244
IC21 (6/8) SN74ALS244
IC21 (7/8) SN74ALS244
IC21 (8/8) SN74ALS244
IC44 (3/4) SN74HC08ANS
IC44 (4/4) SN74HC08ANS

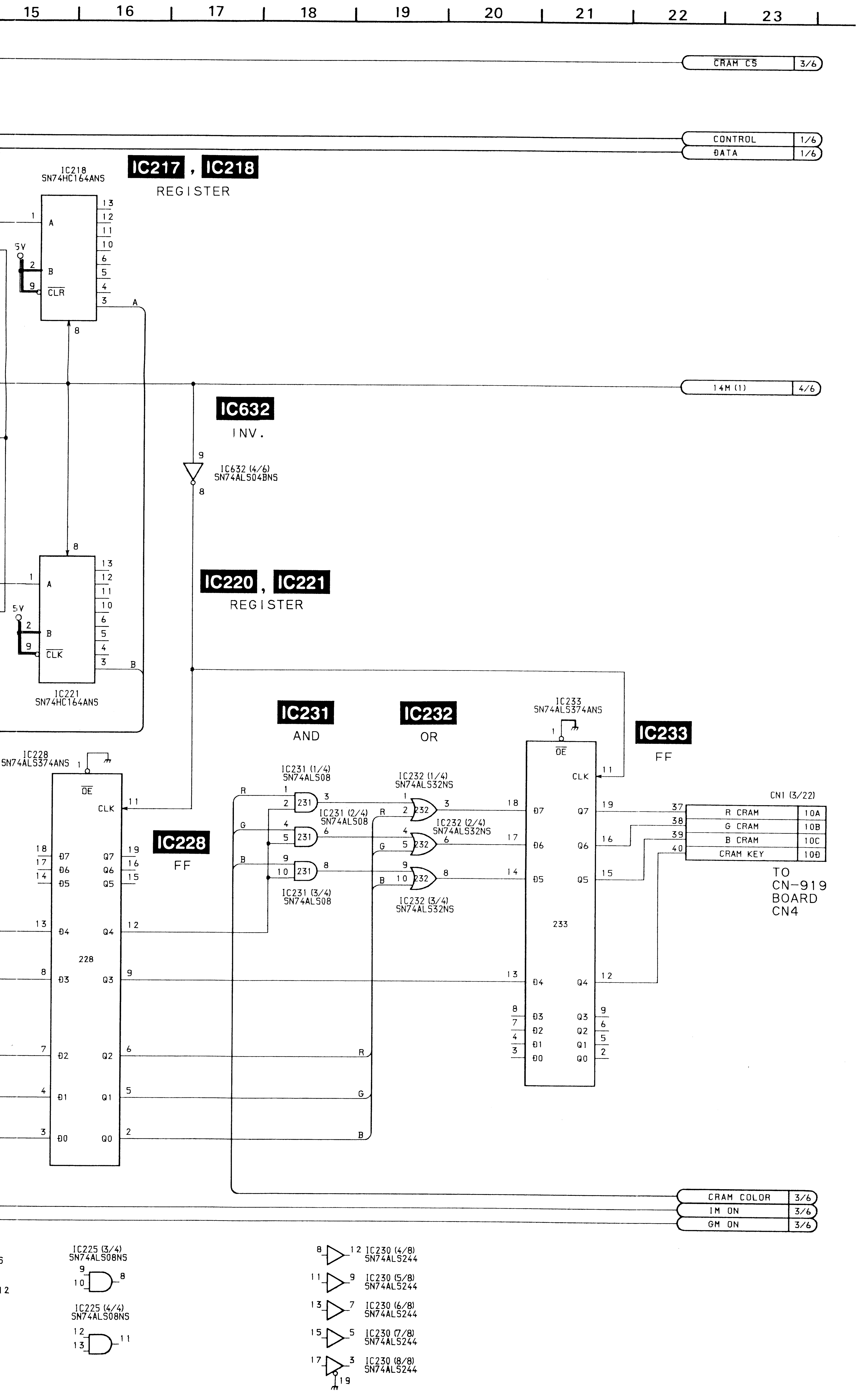
SY-194 — 2/6 — (SYSTEM PROCESS)


1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
3/6 CPU/VIDEO
IC200 SN74HC157ANS
IC201 SN74HC157ANS
IC202 SN74HC157ANS
IC203 SN74HC157ANS
IC204 SN74HC157ANS
A/B
E
A
B
Y
C17
C16
C15
C14
A17
A16
A15
A14
A13
C13
C12
C11
C10
A12
A11
A10
A9
C9
C8
C7
C6
A8
A7
A6
A5
C5
C4
C3
C2
A4
A3
A2
A1
C1
A0
IC
VIDE
IC200
SEL
1/6 ADDRESS
4/6 FLD OUT
4/6 BLK OUT
TE PE CA
D
C
B
A
QD
QC
QB
QA
CLR
LOAD
CLK
5V
IC205 SN74HC163ANS
4/6 VD
4/6 1.75M
5/6 VCBL
5/6 VR
5/6 VG
5/6 VB
C200 0.1
C201 0.1
C202 0.1
C203 0.1
C204 0.1
C205 0.1
C206 0.1
C207 0.1
C208 0.1


7
8
9
10
11
12
13
14
15
16
17
IC210
SN7431000AGW-70L
210
O RAM
IC213 (1/4)
SN74HC00ANS
IC214 (1/4)
SN74HC32ANS
IC214 (2/4)
SN74HC32ANS
IC213, IC214
NAND
IC213 (2/4)
SN74HC00ANS
IC213
NOR
IC211
SN74HC245ANS
IC212
SN74HC244ANS
IC211
TRANCEIVER
IC212
BUFFER
IC215
SN74HC374ANS
IC215
FF
IC217
SN74HC165ANS
IC218
SN74HC164ANS
IC217, IC218
REGISTER
IC222 (1/2)
SN74HC74ANS
IC222 (2/2)
SN74HC74ANS
IC222
FF
IC213 (3/4)
SN74HC00ANS
IC219
FF
IC219
SN74HC374ANS
IC220
SN74HC165ANS
IC221
SN74HC164ANS
IC220, IC2
REGISTER
IC632
INV.
IC632 (4/6)
SN74ALS04BNS
IC213 (4/4)
SN74HC00ANS
IC214 (3/4)
SN74HC32ANS
IC214 (4/4)
SN74HC32ANS
- IC204
LECTOR
IC225 (1/4)
SN74ALS08NS
IC225 (2/4)
SN74ALS08NS
IC225, IC231
AND
IC231 (4/4)
SN74ALS08
IC228
SN74ALS374ANS
IC228
FF
IC227
NOR
IC227 (1/3)
SN74ALS27NS
IC227 (2/3)
SN74ALS27NS
IC230 (1/8)
SN74ALS244
IC230 (2/8)
SN74ALS244
IC230 (3/8)
SN74ALS244
IC230
BUFFER
IC205 - IC208
COUNTER
IC206
SN74HC163ANS
IC207
SN74HC163ANS
IC208
SN74HC163ANS
IC227 (3/3)
SN74ALS27NS
IC225 (3/4)
SN74ALS08NS
IC225 (4/4)
SN74ALS08NS
5V



IC210 VIDEO RAM
IC210 μPD431000AGW-70L
IC213 NOR
IC213 (1/4) SN74HC00ANS
IC213 (2/4) SN74HC00ANS
IC213 (3/4) SN74HC00ANS
IC213 (4/4) SN74HC00ANS
IC213 , IC214 NAND
IC214 (1/4) SN74HC32ANS
IC214 (2/4) SN74HC32ANS
IC214 (3/4) SN74HC32ANS
IC214 (4/4) SN74HC32ANS
IC211 TRANCEIVER
IC211 SN74HC245ANS
IC212 BUFFER
IC212 SN74HC244ANS
IC215 FF
IC215 SN74HC374ANS
IC222 FF
IC222 (1/2) SN74HC74ANS
IC222 (2/2) SN74HC74ANS
IC219 FF
IC219 SN74HC374ANS
IC217 , IC21 REGISTER
IC217 SN74HC165ANS
IC218 SN74HC164ANS
IC220 SN74HC165ANS
IC221 SN74HC164ANS
IC200 - IC204 SELECTOR
IC205 - IC208 COUNTER
IC206 SN74HC163ANS
IC207 SN74HC163ANS
IC208 SN74HC163ANS
IC225 , IC231 AND
IC225 (1/4) SN74ALS08NS
IC225 (2/4) SN74ALS08NS
IC225 (3/4) SN74ALS08NS
IC225 (4/4) SN74ALS08NS
IC231 (4/4) SN74ALS08
IC227 NOR
IC227 (1/3) SN74ALS27NS
IC227 (2/3) SN74ALS27NS
IC227 (3/3) SN74ALS27NS
IC228 FF
IC228 SN74ALS374ANS
IC230 BUFFER
IC230 (1/8) SN74ALS244
IC230 (2/8) SN74ALS244
IC230 (3/8) SN74ALS244
IC63 SN74A
IC22 R
IC
5V
C210 0.1
UW
R/W
C207 C208 C211 C212 C213 C214 C215 C216 C217 C218 C219 C220 C221 C222 C225 C227 C228 C230 C231 C232 C233 0.1
6 7 8 9 10 11 12 13 14 15 16 17


15
16
17
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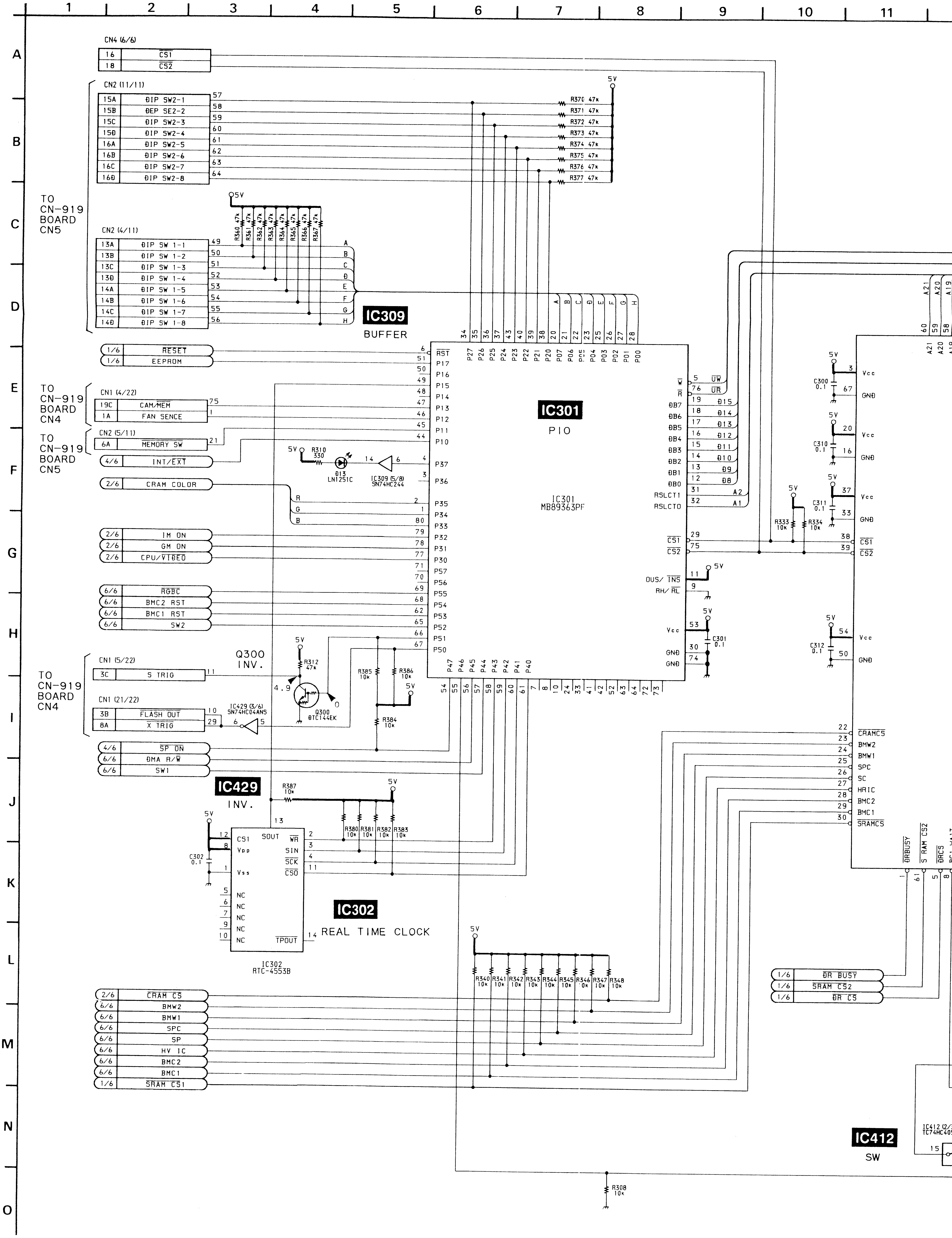
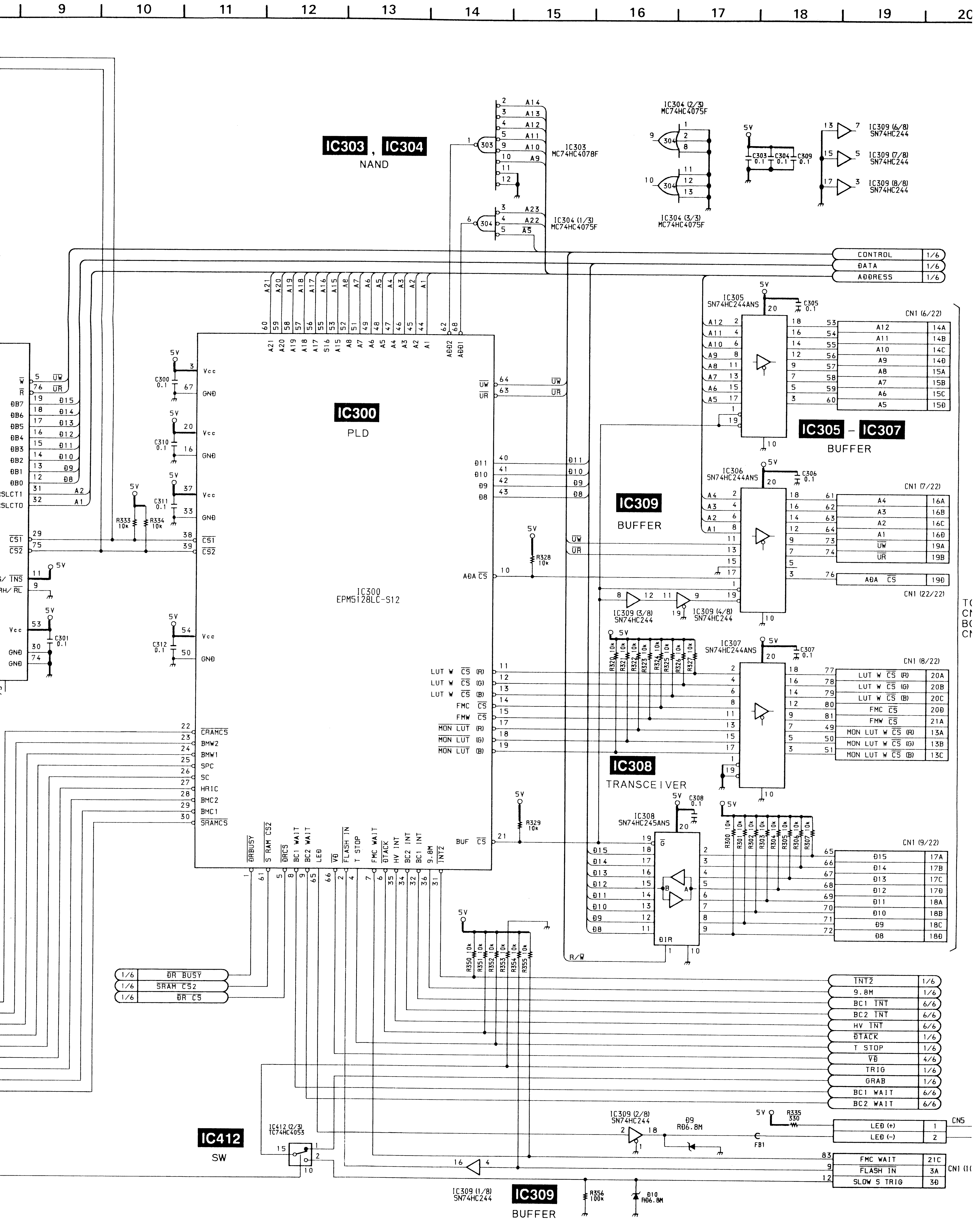
21
22
23
CRAM CS 3/6
CONTROL 1/6
DATA 1/6
IC217 , IC218
REGISTER
IC218
SN74HC164ANS
A
B
CLR
5V
14M (1) 4/6
IC632
INV.
IC632 (4/6)
SN74ALS04BNS
IC220 , IC221
REGISTER
IC221
SN74HC164ANS
CLK
IC231
AND
IC232
OR
IC233
FF
IC233
SN74ALS374ANS
IC228
SN74ALS374ANS
IC228
FF
OE
CLK
D7 D6 D5 D4 D3 D2 D1 D0
Q7 Q6 Q5 Q4 Q3 Q2 Q1 Q0
228
233
IC231 (1/4)
SN74ALS08
IC231 (2/4)
SN74ALS08
IC231 (3/4)
SN74ALS08
IC232 (1/4)
SN74ALS32NS
IC232 (2/4)
SN74ALS32NS
IC232 (3/4)
SN74ALS32NS
R
G
B
CN1 (3/22)
37 R CRAM 10A
38 G CRAM 10B
39 B CRAM 10C
40 CRAM KEY 10D
TO
CN-919
BOARD
CN4
CRAM COLOR 3/6
IM ON 3/6
GM ON 3/6
IC225 (3/4)
SN74ALS08NS
IC225 (4/4)
SN74ALS08NS
IC230 (4/8)
SN74ALS244
IC230 (5/8)
SN74ALS244
IC230 (6/8)
SN74ALS244
IC230 (7/8)
SN74ALS244
IC230 (8/8)
SN74ALS244

SY-194 — 3/6 — (SYSTEM PROCESS) PE-18 (POWER SWITCH)


CN4 (6/6)
16 CS1
18 CS2
CN2 (11/11)
15A DIP SW2-1
15B DEP SE2-2
15C DIP SW2-3
15D DIP SW2-4
16A DIP SW2-5
16B DIP SW2-6
16C DIP SW2-7
16D DIP SW2-8
R370 47k
R371 47k
R372 47k
R373 47k
R374 47k
R375 47k
R376 47k
R377 47k
5V
TO CN-919 BOARD CN5
CN2 (4/11)
13A DIP SW 1-1
13B DIP SW 1-2
13C DIP SW 1-3
13D DIP SW 1-4
14A DIP SW 1-5
14B DIP SW 1-6
14C DIP SW 1-7
14D DIP SW 1-8
R360 47k
R361 47k
R362 47k
R363 47k
R364 47k
R365 47k
R366 47k
R367 47k
IC309
BUFFER
1/6 RESET
1/6 EEPROM
TO CN-919 BOARD CN4
CN1 (4/22)
19C CAM/MEM
1A FAN SENCE
TO CN-919 BOARD CN5
CN2 (5/11)
6A MEMORY SW
4/6 INT/EXT
2/6 CRAM COLOR
R310 330
D13 LN1251C
IC309 (5/8) SN74HC244
2/6 IM ON
2/6 GM ON
2/6 CPU/VIDEO
6/6 RGBC
6/6 BMC2 RST
6/6 BMC1 RST
6/6 SW2
Q300 INV.
R312 47k
Q300 DTC144EK
R385 10k
R386 10k
R384 10k
TO CN-919 BOARD CN4
CN1 (5/22)
3C S TRIG
CN1 (21/22)
3B FLASH OUT
8A X TRIG
IC429 (3/6) SN74HC04ANS
4/6 SP ON
6/6 DMA R/W
6/6 SW1
IC429
INV.
R387 10k
R380 10k
R381 10k
R382 10k
R383 10k
C302 0.1
CS1 SOUT WR SIN SCK CS0 VDD VSS NC TPOUT
IC302
REAL TIME CLOCK
IC302 RTC-4553B
IC301
PIO
IC301 MB89363PF
RST P17 P16 P15 P14 P13 P12 P11 P10 P37 P36 P35 P34 P33 P32 P31 P30 P57 P56 P55 P54 P53 P52 P51 P50
P27 P26 P25 P24 P23 P22 P21 P20 P07 P06 P05 P04 P03 P02 P01 P00
P47 P46 P45 P44 P43 P42 P41 P40
WI RI DB7 DB6 DB5 DB4 DB3 DB2 DB1 DB0 RSLCT1 RSLCT0 CS1 CS2 OUS/INS RH/RL Vcc GND GND
UW UR D15 D14 D13 D12 D11 D10 D9 D8 A2 A1
C301 0.1
C300 0.1
C310 0.1
C311 0.1
C312 0.1
R333 10k
R334 10k
Vcc GND CS1 CS2
CRAMCS BMW2 BMW1 SPC SC HRIC BMC2 BMC1 SRAMCS
DRBUSY S RAM CS2 DRCS
A21 A20 A19
R340 10k
R341 10k
R342 10k
R343 10k
R344 10k
R345 10k
R346 0k
R347 10k
R348 10k
2/6 CRAM CS
6/6 BMW2
6/6 BMW1
6/6 SPC
6/6 SP
6/6 HV IC
6/6 BMC2
6/6 BMC1
1/6 SRAM CS1
1/6 DR BUSY
1/6 SRAM CS2
1/6 DR CS
IC412
SW
IC412 (2/ TC74HC40
R308 10k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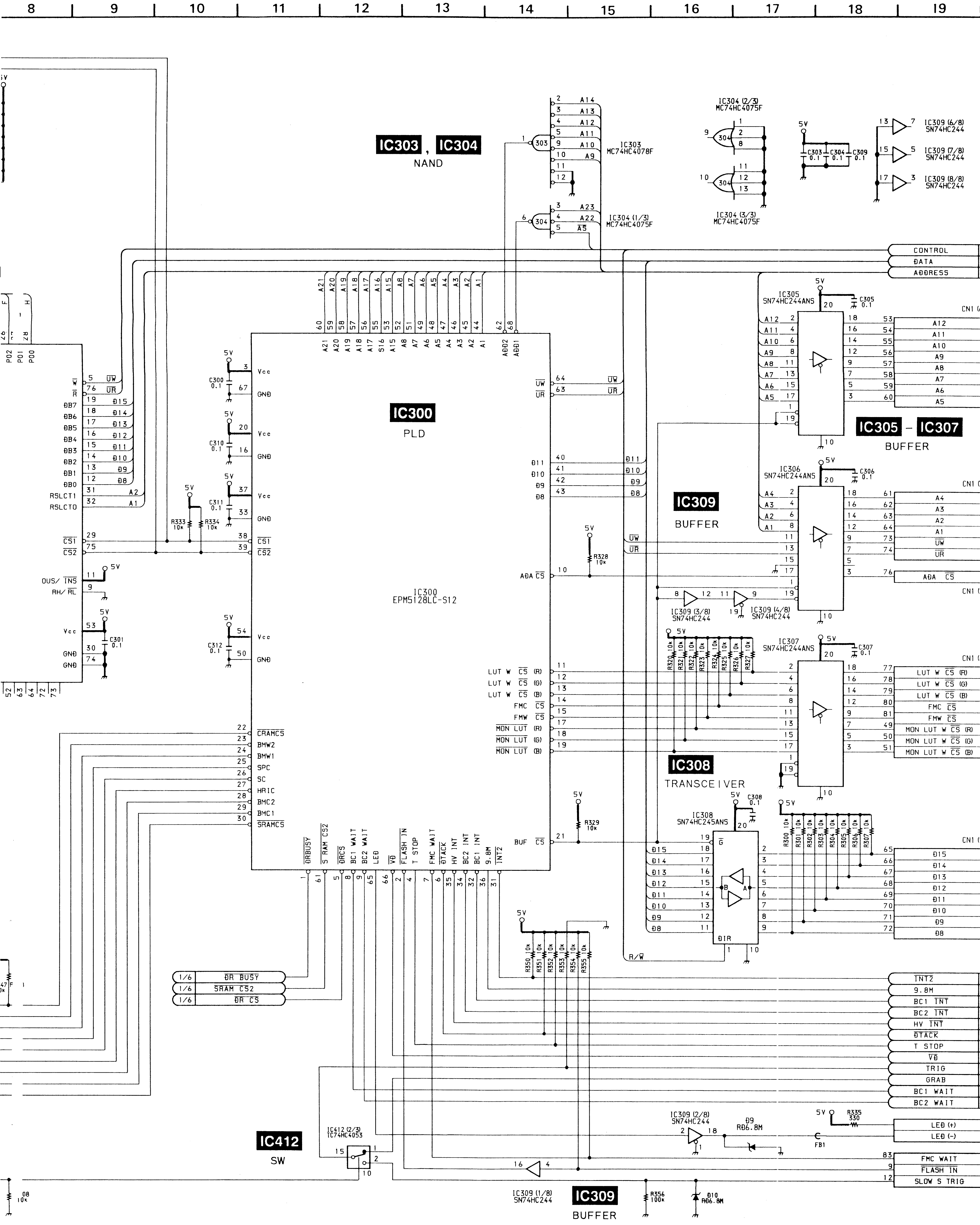
14
15
16
17
18
19
IC303
IC304
NAND
IC303
MC74HC4078F
IC304 (1/3)
MC74HC4075F
IC304 (2/3)
MC74HC4075F
IC304 (3/3)
MC74HC4075F
IC309 (6/8)
SN74HC244
IC309 (7/8)
SN74HC244
IC309 (8/8)
SN74HC244
C303 0.1
C304 0.1
C309 0.1
A14
A13
A12
A11
A10
A9
A23
A22
A5
CONTROL 1/6
DATA 1/6
ADDRESS 1/6
IC300
PLD
IC300
EPM5128LC-S12
Vcc
GND
UW
UR
D15
D14
D13
D12
D11
D10
D9
D8
DB7
DB6
DB5
DB4
DB3
DB2
DB1
DB0
CS1
CS2
R333 10k
R334 10k
C300 0.1
C310 0.1
C311 0.1
C312 0.1
C301 0.1
ADA CS
R328 10k
R329 10k
LUT W CS (R)
LUT W CS (G)
LUT W CS (B)
FMC CS
FMW CS
MON LUT (R)
MON LUT (G)
MON LUT (B)
CRAMCS
BMW2
BMW1
SPC
SC
HRIC
BMC2
BMC1
SRAMCS
DRBUSY
S RAM CS2
DRCS
BC1 WAIT
BC2 WAIT
LED
VD
FLASH IN
T STOP
FMC WAIT
DTACK
HV INT
BC2 INT
BC1 INT
9.8M
INT2
BUF CS
IC305
SN74HC244ANS
C305 0.1
IC306
SN74HC244ANS
C306 0.1
IC307
SN74HC244ANS
C307 0.1
IC305 - IC307
BUFFER
IC309
BUFFER
IC309 (3/8)
SN74HC244
IC309 (4/8)
SN74HC244
IC308
TRANSCEIVER
IC308
SN74HC245ANS
C308 0.1
R300–R307 10k
R320–R327 10k
R350–R355 10k
DIR
R/W
CN1 (6/22)
CN1 (7/22)
CN1 (22/22)
CN1 (8/22)
CN1 (9/22)
14A 14B 14C 14D 15A 15B 15C 15D
16A 16B 16C 16D 19A 19B
19D
20A 20B 20C 20D 21A 13A 13B 13C
MON LUT W CS (R)
MON LUT W CS (G)
MON LUT W CS (B)
17A 17B 17C 17D 18A 18B 18C 18D
1/6 DR BUSY
1/6 SRAM CS2
1/6 DR CS
INT2 1/6
9.8M 1/6
BC1 INT 6/6
BC2 INT 6/6
HV INT 6/6
DTACK 1/6
T STOP 1/6
VD 4/6
TRIG 1/6
GRAB 1/6
BC1 WAIT 6/6
BC2 WAIT 6/6
IC309 (2/8)
SN74HC244
D9
RD6.8M
R335 330
FB1
LED (+) 1
LED (-) 2
CN5
FMC WAIT 21C
FLASH IN 3A
SLOW S TRIG 3D
CN1 (1
IC412
SW
IC412 (2/3)
TC74HC4053
IC309 (1/8)
SN74HC244
IC309
BUFFER
R356 100k
D10
RD6.8M
5V



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9
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16
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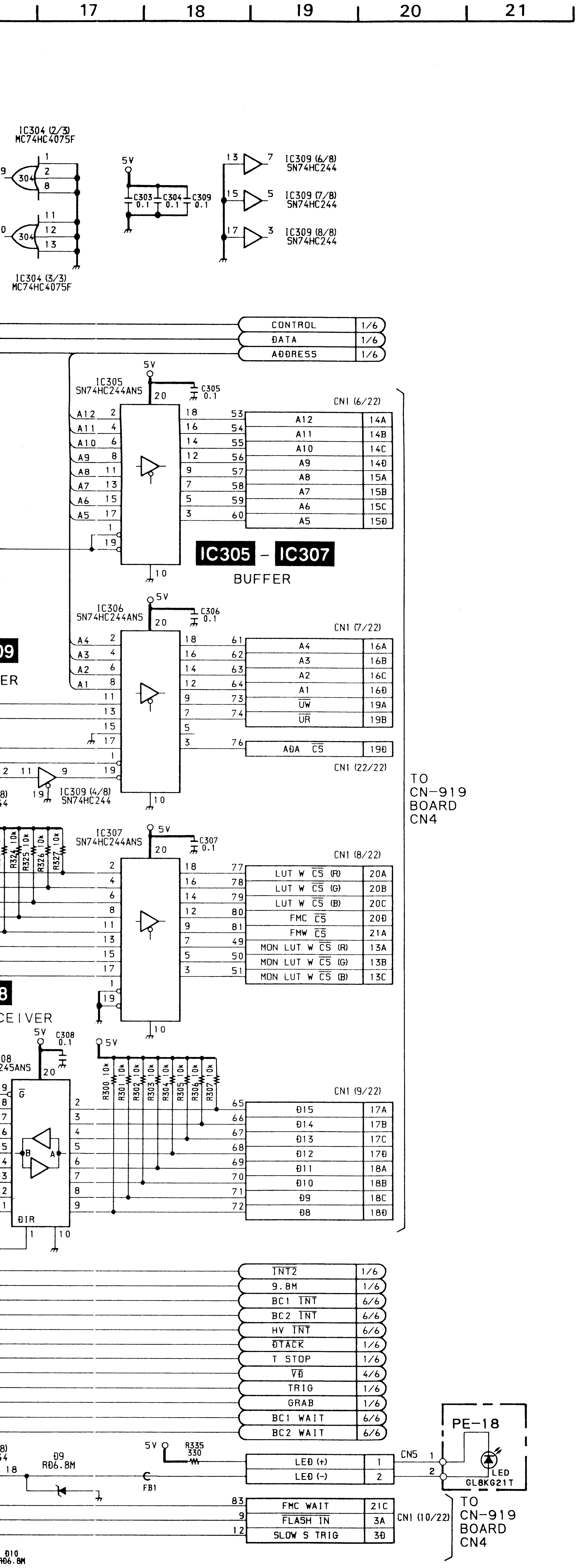
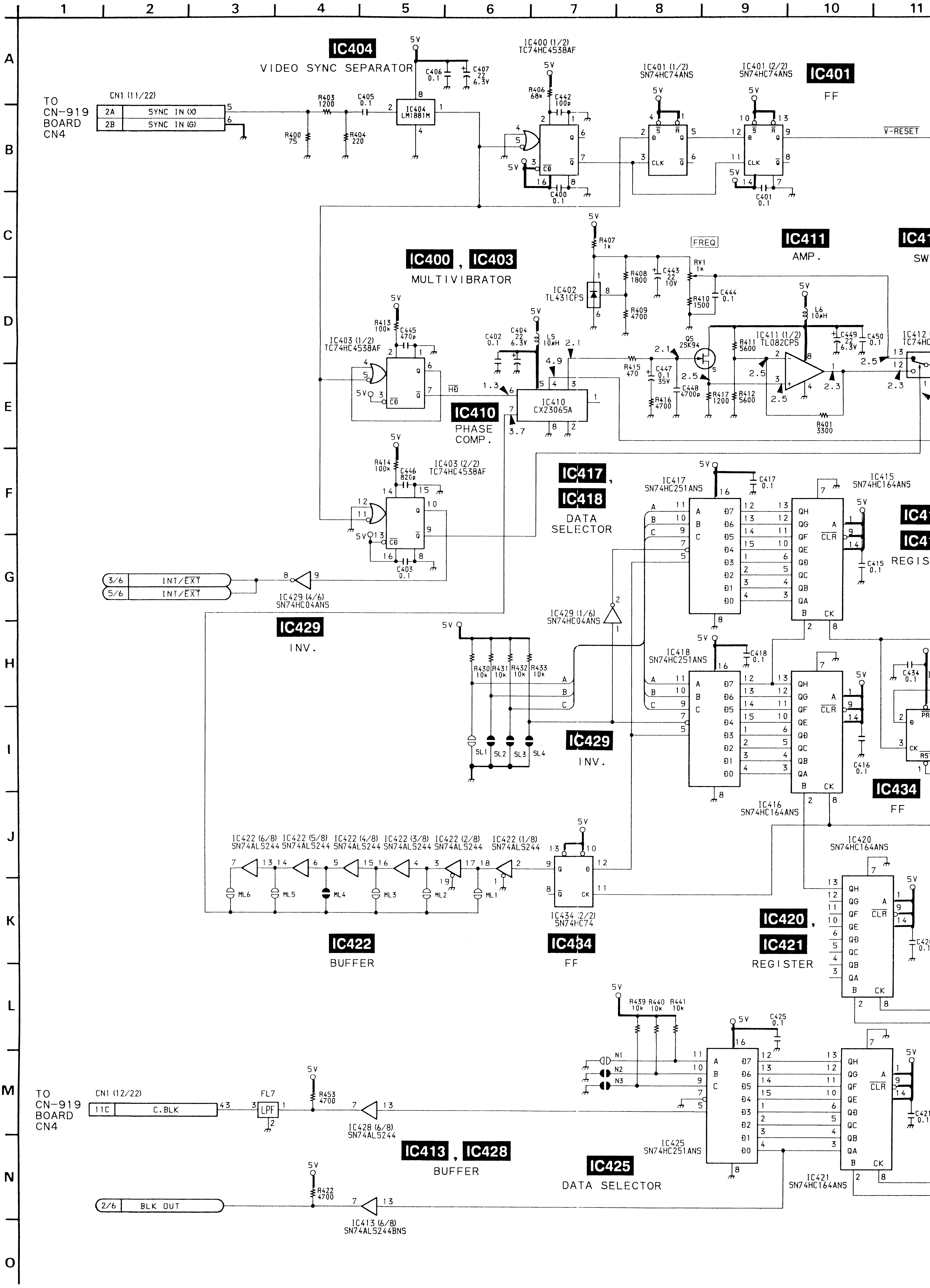
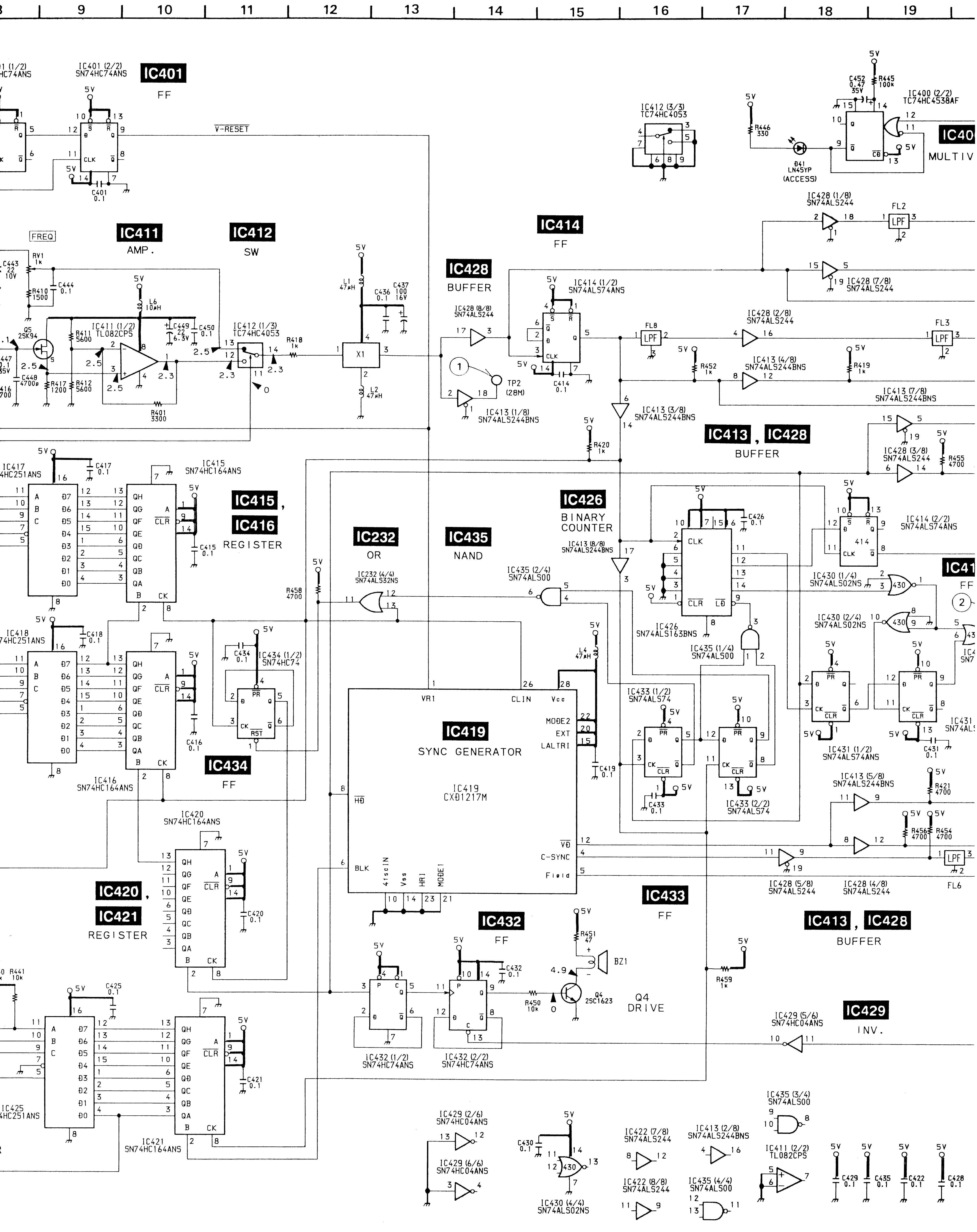
18
19
IC303, IC304
NAND
IC303
MC74HC4078F
IC304 (1/3)
MC74HC4075F
IC304 (2/3)
MC74HC4075F
IC304 (3/3)
MC74HC4075F
IC309 (6/8)
SN74HC244
IC309 (7/8)
SN74HC244
IC309 (8/8)
SN74HC244
A14
A13
A12
A11
A10
A9
A23
A22
A5
CONTROL
DATA
ADDRESS
IC300
PLD
IC300
EPM5128LC-S12
Vcc
GND
UW
UR
CS1
CS2
ADA CS
BUF CS
LUT W CS (R)
LUT W CS (G)
LUT W CS (B)
FMC CS
FMW CS
MON LUT (R)
MON LUT (G)
MON LUT (B)
CRAMCS
BMW2
BMW1
SPC
SC
HRIC
BMC2
BMC1
SRAMCS
DRBUSY
S RAM CS2
DRCS
BC1 WAIT
BC2 WAIT
LED
VD
FLASH IN
T STOP
FMC WAIT
DTACK
HV INT
BC2 INT
BC1 INT
9.8M
INT2
D15
D14
D13
D12
D11
D10
D9
D8
DB7
DB6
DB5
DB4
DB3
DB2
DB1
DB0
RSLCT1
RSLCT0
DUS/INS
RH/RL
R333 10k
R334 10k
R328 10k
R329 10k
C300 0.1
C310 0.1
C311 0.1
C312 0.1
C301 0.1
5V
IC305
SN74HC244ANS
C305 0.1
IC306
SN74HC244ANS
C306 0.1
IC307
SN74HC244ANS
C307 0.1
IC305 - IC307
BUFFER
IC309
BUFFER
IC309 (3/8)
SN74HC244
IC309 (4/8)
SN74HC244
IC308
TRANSCEIVER
IC308
SN74HC245ANS
C308 0.1
DIR
R/W
CN1
A12
A11
A10
A9
A8
A7
A6
A5
A4
A3
A2
A1
ADA CS
LUT W CS (R)
LUT W CS (G)
LUT W CS (B)
FMC CS
FMW CS
MON LUT W CS (R)
MON LUT W CS (G)
MON LUT W CS (B)
R320–R327 10k
R300–R307 10k
R350–R355 10k
1/6 DR BUSY
1/6 SRAM CS2
1/6 DR CS
INT2
9.8M
BC1 INT
BC2 INT
HV INT
DTACK
T STOP
VD
TRIG
GRAB
BC1 WAIT
BC2 WAIT
IC309 (2/8)
SN74HC244
D9
RD6.8M
R335 330
FB1
LED (+)
LED (-)
FMC WAIT
FLASH IN
SLOW S TRIG
IC412 (2/3)
TC74HC4053
IC412
SW
IC309 (1/8)
SN74HC244
IC309
BUFFER
R356 100k
D10
RD6.8M
R308 10k


17
18
19
20
21
IC304 (2/3) MC74HC4075F
IC304 (3/3) MC74HC4075F
5V
C303 0.1
C304 0.1
C309 0.1
IC309 (6/8) SN74HC244
IC309 (7/8) SN74HC244
IC309 (8/8) SN74HC244
CONTROL 1/6
DATA 1/6
ADDRESS 1/6
IC305 SN74HC244ANS
C305 0.1
CN1 (6/22)
A12 14A
A11 14B
A10 14C
A9 14D
A8 15A
A7 15B
A6 15C
A5 15D
IC305 - IC307
BUFFER
IC306 SN74HC244ANS
C306 0.1
CN1 (7/22)
A4 16A
A3 16B
A2 16C
A1 16D
UW 19A
UR 19B
ADA CS 19D
CN1 (22/22)
IC309 (4/8) SN74HC244
TO CN-919 BOARD CN4
IC307 SN74HC244ANS
C307 0.1
R324 10k
R325 10k
R326 10k
R327 10k
CN1 (8/22)
LUT W CS (R) 20A
LUT W CS (G) 20B
LUT W CS (B) 20C
FMC CS 20D
FMW CS 21A
MON LUT W CS (R) 13A
MON LUT W CS (G) 13B
MON LUT W CS (B) 13C
CEIVER
C308 0.1
245ANS
R300 10k
R301 10k
R302 10k
R303 10k
R304 10k
R305 10k
R306 10k
R307 10k
CN1 (9/22)
D15 17A
D14 17B
D13 17C
D12 17D
D11 18A
D10 18B
D9 18C
D8 18D
DIR
INT2 1/6
9.8M 1/6
BC1 INT 6/6
BC2 INT 6/6
HV INT 6/6
DTACK 1/6
T STOP 1/6
VD 4/6
TRIG 1/6
GRAB 1/6
BC1 WAIT 6/6
BC2 WAIT 6/6
PE-18
R335 330
D9 RD6.8M
FB1
LED (+) 1
LED (-) 2
CN5
LED GL8KG21T
FMC WAIT 21C
FLASH IN 3A
SLOW S TRIG 3D
CN1 (10/22)
TO CN-919 BOARD CN4
D10 RD6.8M


IC404
VIDEO SYNC SEPARATOR
IC404 LM1881M
TO CN-919 BOARD CN4
CN1 (11/22)
SYNC IN (X)
SYNC IN (G)
IC400 (1/2) TC74HC4538AF
IC401 (1/2) SN74HC74ANS
IC401 (2/2) SN74HC74ANS
IC401
FF
V-RESET
IC400, IC403
MULTIVIBRATOR
IC403 (1/2) TC74HC4538AF
IC403 (2/2) TC74HC4538AF
IC402 TL431CPS
FREQ
IC411
AMP.
IC411 (1/2) TL082CPS
Q5 2SK94
IC410
PHASE COMP.
IC410 CX23065A
HD
IC417, IC418
DATA SELECTOR
IC417 SN74HC251ANS
IC418 SN74HC251ANS
IC415 SN74HC164ANS
IC416 SN74HC164ANS
REGIS
INT/EXT
IC429 (4/6) SN74HC04ANS
IC429 (1/6) SN74HC04ANS
IC429
INV.
SL1 SL2 SL3 SL4
IC434
FF
IC422
BUFFER
IC422 (6/8) SN74ALS244
IC422 (5/8) SN74ALS244
IC422 (4/8) SN74ALS244
IC422 (3/8) SN74ALS244
IC422 (2/8) SN74ALS244
IC422 (1/8) SN74ALS244
ML6 ML5 ML4 ML3 ML2 ML1
IC434 (2/2) SN74HC74
IC420, IC421
REGISTER
IC420 SN74HC164ANS
IC421 SN74HC164ANS
CN1 (12/22)
C.BLK
FL7 LPF
IC428 (6/8) SN74ALS244
IC413, IC428
BUFFER
IC425
DATA SELECTOR
IC425 SN74HC251ANS
N1 N2 N3
BLK OUT
IC413 (6/8) SN74ALS244BNS
5V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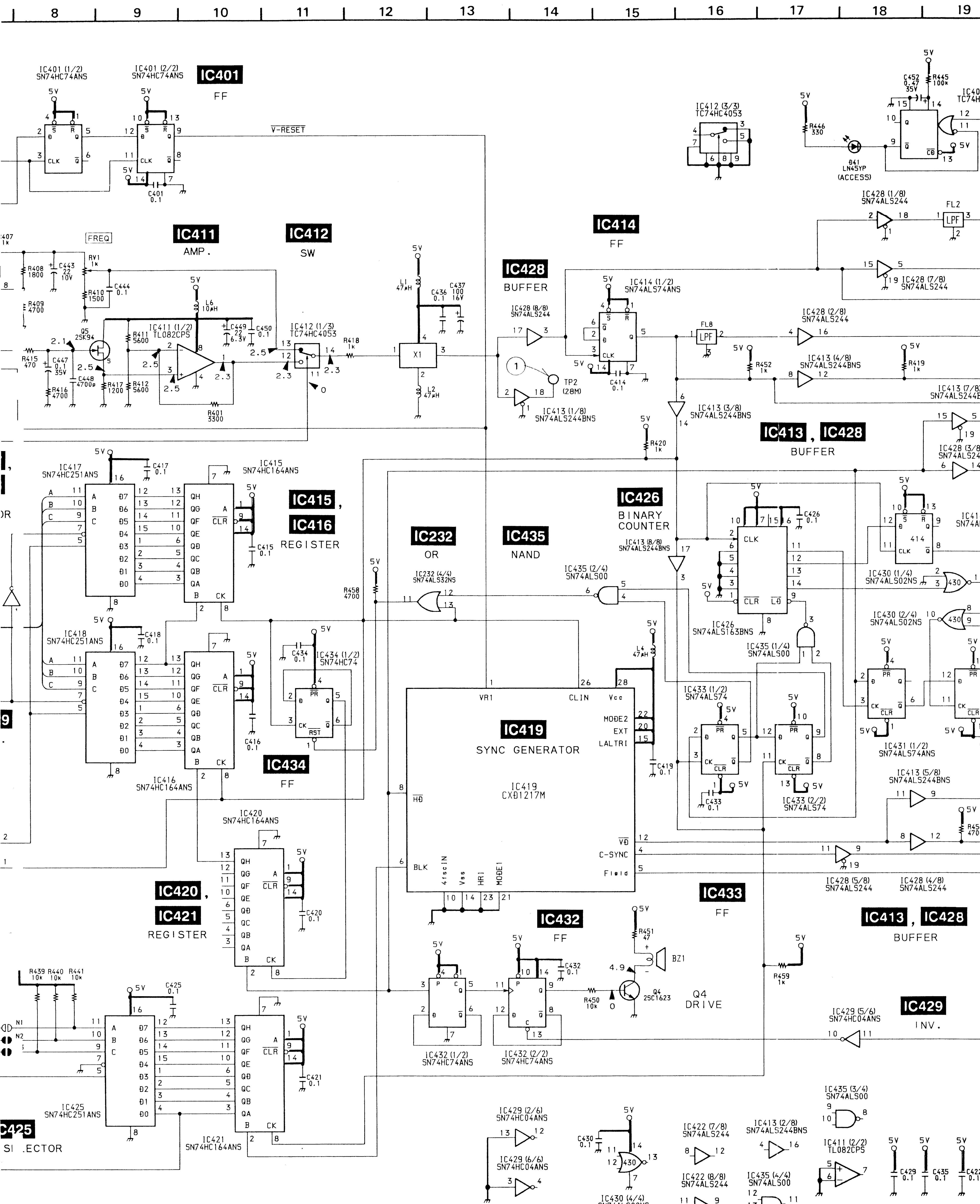
IC401 (2/2)
SN74HC74ANS
IC401
FF
V-RESET
IC412 (3/3)
TC74HC4053
IC400 (2/2)
TC74HC4538AF
MULTIV
R445 100k
C452 0.47 35V
R446 330
D41 LN45YP (ACCESS)
FREQ
IC411
AMP.
IC412
SW
IC414
FF
IC428
BUFFER
IC428 (1/8)
SN74ALS244
FL2
LPF
IC428 (7/8)
SN74ALS244
RV1 1k
C443 22 10V
C444 0.1
R410 1500
Q5 2SK94
L6 10µH
IC411 (1/2)
TL082CPS
R411 5600
C449 22 6.3V
C450 0.1
IC412 (1/3)
TC74HC4053
R418 1k
L1 47µH
C436 0.1
C437 100 16V
X1
L2 47µH
IC428 (8/8)
SN74ALS244
TP2 (28M)
IC413 (1/8)
SN74ALS244BNS
IC414 (1/2)
SN74ALS74ANS
C414 0.1
FL8
IC428 (2/8)
SN74ALS244
FL3
R452 1k
IC413 (4/8)
SN74ALS244BNS
R419 1k
IC413 (7/8)
SN74ALS244BNS
C448 4700p
R417 1200
R412 5600
R401 3300
IC413 (3/8)
SN74ALS244BNS
IC413, IC428
BUFFER
R420 1k
IC428 (3/8)
SN74ALS244
R455 4700
IC417
SN74HC251ANS
C417 0.1
IC415
SN74HC164ANS
IC415, IC416
REGISTER
C415 0.1
IC426
BINARY COUNTER
C426 0.1
IC414 (2/2)
SN74ALS74ANS
IC413 (8/8)
SN74ALS244BNS
IC232
OR
IC435
NAND
R458 4700
IC232 (4/4)
SN74ALS32NS
IC435 (2/4)
SN74ALS00
IC426
SN74ALS163BNS
IC430 (1/4)
SN74ALS02NS
IC430 (2/4)
SN74ALS02NS
IC418
SN74HC251ANS
C418 0.1
C434 0.1
IC434 (1/2)
SN74HC74
C416 0.1
IC416
SN74HC164ANS
IC434
FF
IC435 (1/4)
SN74ALS00
L4 47µH
IC433 (1/2)
SN74ALS74
IC431 (1/2)
SN74ALS74ANS
C431 0.1
IC431
IC419
SYNC GENERATOR
IC419
CXD1217M
VR1
CLIN
Vcc
MODE2
EXT
LALTRI
HD
VD
C-SYNC
Field
BLK
4fscIN
Vss
HR1
MODE1
C419 0.1
C433 0.1
IC433 (2/2)
SN74ALS74
IC413 (5/8)
SN74ALS244BNS
R421 4700
R456 4700
R454 4700
IC428 (5/8)
SN74ALS244
IC428 (4/8)
SN74ALS244
FL6
IC420
SN74HC164ANS
C420 0.1
IC420, IC421
REGISTER
IC433
FF
IC432
FF
IC413, IC428
BUFFER
R451 47
BZ1
C432 0.1
R459 1k
R450 10k
Q4 2SC1623
Q4
DRIVE
IC429 (5/6)
SN74HC04ANS
IC429
INV.
R441 10k
C425 0.1
C421 0.1
IC432 (1/2)
SN74HC74ANS
IC432 (2/2)
SN74HC74ANS
IC425
SN74HC251ANS
IC421
SN74HC164ANS
IC429 (2/6)
SN74HC04ANS
IC429 (6/6)
SN74HC04ANS
C430 0.1
IC430 (4/4)
SN74ALS02NS
IC422 (7/8)
SN74ALS244
IC422 (8/8)
SN74ALS244
IC413 (2/8)
SN74ALS244BNS
IC435 (4/4)
SN74ALS00
IC435 (3/4)
SN74ALS00
IC411 (2/2)
TL082CPS
C429 0.1
C435 0.1
C422 0.1
C428 0.1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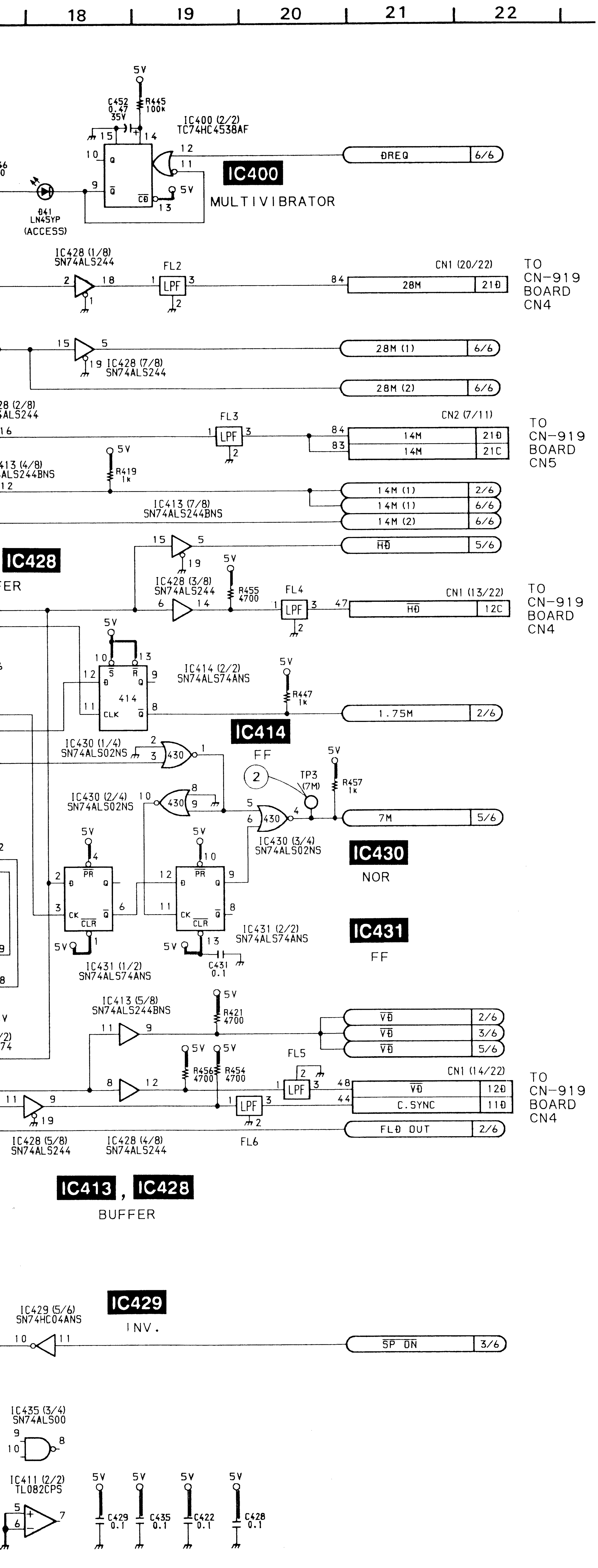
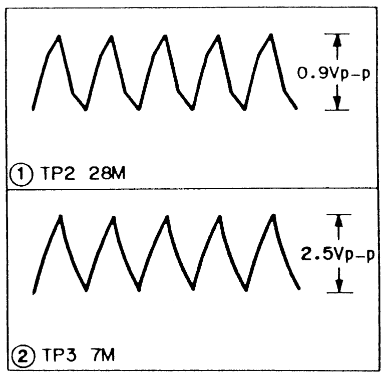
IC401
FF
IC401 (1/2) SN74HC74ANS
IC401 (2/2) SN74HC74ANS
V-RESET
IC411
AMP.
IC411 (1/2) TL082CPS
IC412
SW
IC412 (1/3) TC74HC4053
IC412 (3/3) TC74HC4053
FREQ
Q5 2SK94
X1
TP2 (28M)
IC414
FF
IC414 (1/2) SN74ALS74ANS
IC428
BUFFER
D41 LN45YP (ACCESS)
FL2 LPF
FL8 LPF
IC413, IC428
BUFFER
IC417 SN74HC251ANS
IC418 SN74HC251ANS
IC415 SN74HC164ANS
IC416 SN74HC164ANS
IC415, IC416
REGISTER
IC232
OR
IC232 (4/4) SN74ALS32NS
IC435
NAND
IC435 (2/4) SN74ALS00
IC426
BINARY COUNTER
IC426 SN74ALS163BNS
IC434
FF
IC434 (1/2) SN74HC74
IC419
SYNC GENERATOR
IC419 CXD1217M
VR1
CLIN
Vcc
MODE2
EXT
LALTRI
HD
BLK
VD
C-SYNC
Field
IC433
FF
IC433 (1/2) SN74ALS74
IC433 (2/2) SN74ALS74
IC431 (1/2) SN74ALS74ANS
IC430 (1/4) SN74ALS02NS
IC430 (2/4) SN74ALS02NS
IC420 SN74HC164ANS
IC421 SN74HC164ANS
IC420, IC421
REGISTER
IC425 SN74HC251ANS
IC425
SELECTOR
IC432
FF
IC432 (1/2) SN74HC74ANS
IC432 (2/2) SN74HC74ANS
Q4 2SC1623
Q4
DRIVE
BZ1
IC413, IC428
BUFFER
IC429
INV.
IC429 (5/6) SN74HC04ANS
IC429 (2/6) SN74HC04ANS
IC429 (6/6) SN74HC04ANS
IC430 (4/4) SN74ALS02NS
IC422 (7/8) SN74ALS244
IC422 (8/8) SN74ALS244
IC413 (2/8) SN74ALS244BNS
IC435 (3/4) SN74ALS00
IC435 (4/4) SN74ALS00
IC411 (2/2) TL082CPS

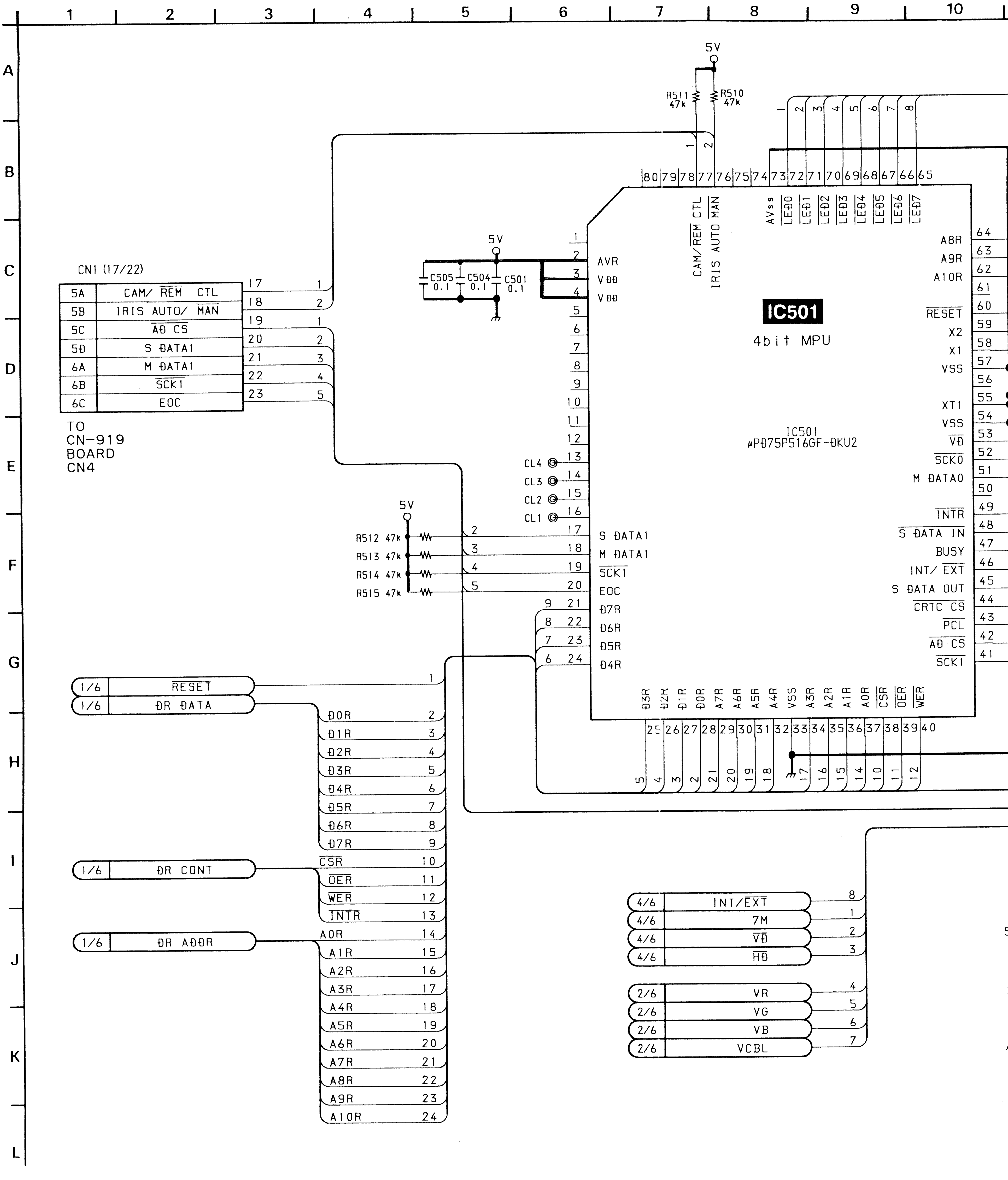


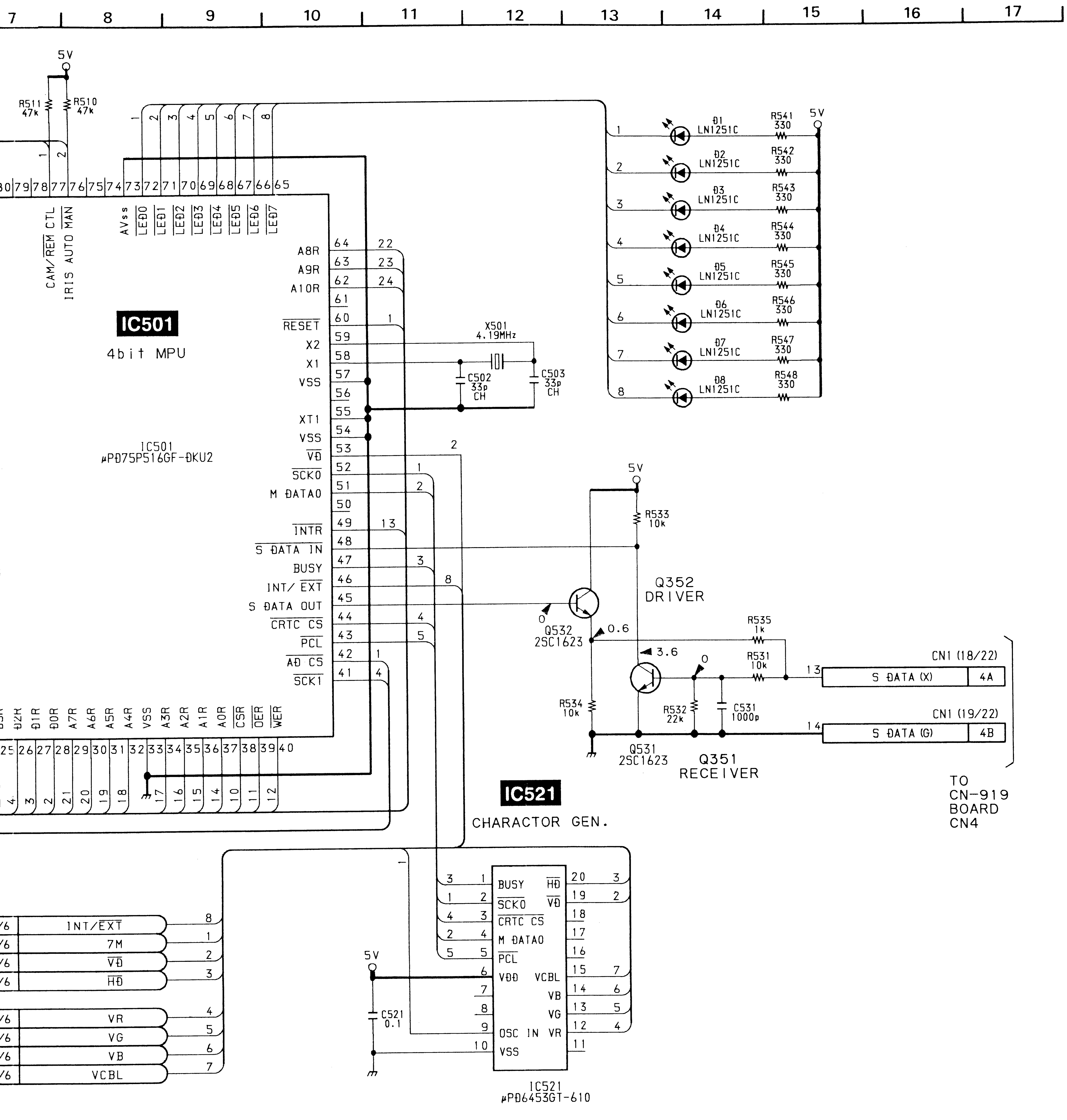
18
19
20
21
22
5V
C452 0.47 35V
R445 100k
IC400 (2/2) TC74HC4538AF
DREQ 6/6
IC400
MULTIVIBRATOR
D41 LN45YP (ACCESS)
IC428 (1/8) SN74ALS244
FL2
LPF
CN1 (20/22)
28M 21D
TO CN-919 BOARD CN4
28M (1) 6/6
IC428 (7/8) SN74ALS244
28M (2) 6/6
FL3
CN2 (7/11)
14M 21D
14M 21C
TO CN-919 BOARD CN5
R419 1k
14M (1) 2/6
14M (1) 6/6
14M (2) 6/6
IC413 (7/8) SN74ALS244BNS
HD 5/6
IC428
IC428 (3/8) SN74ALS244
R455 4700
FL4
CN1 (13/22)
HD 12C
TO CN-919 BOARD CN4
IC414 (2/2) SN74ALS74ANS
R447 1k
1.75M 2/6
IC414
FF
IC430 (1/4) SN74ALS02NS
IC430 (2/4) SN74ALS02NS
TP3 (7M)
R457 1k
7M 5/6
IC430 (3/4) SN74ALS02NS
IC430
NOR
IC431 (2/2) SN74ALS74ANS
IC431
FF
IC431 (1/2) SN74ALS74ANS
C431 0.1
IC413 (5/8) SN74ALS244BNS
R421 4700
VD 2/6
VD 3/6
VD 5/6
R456 4700
R454 4700
FL5
CN1 (14/22)
VD 12D
C.SYNC 11D
TO CN-919 BOARD CN4
FLD OUT 2/6
FL6
IC428 (5/8) SN74ALS244
IC428 (4/8) SN74ALS244
IC413, IC428
BUFFER
IC429 (5/6) SN74HC04ANS
IC429
INV.
SP ON 3/6
IC435 (3/4) SN74ALS00
IC411 (2/2) TL082CPS
C429 0.1
C435 0.1
C422 0.1
C428 0.1

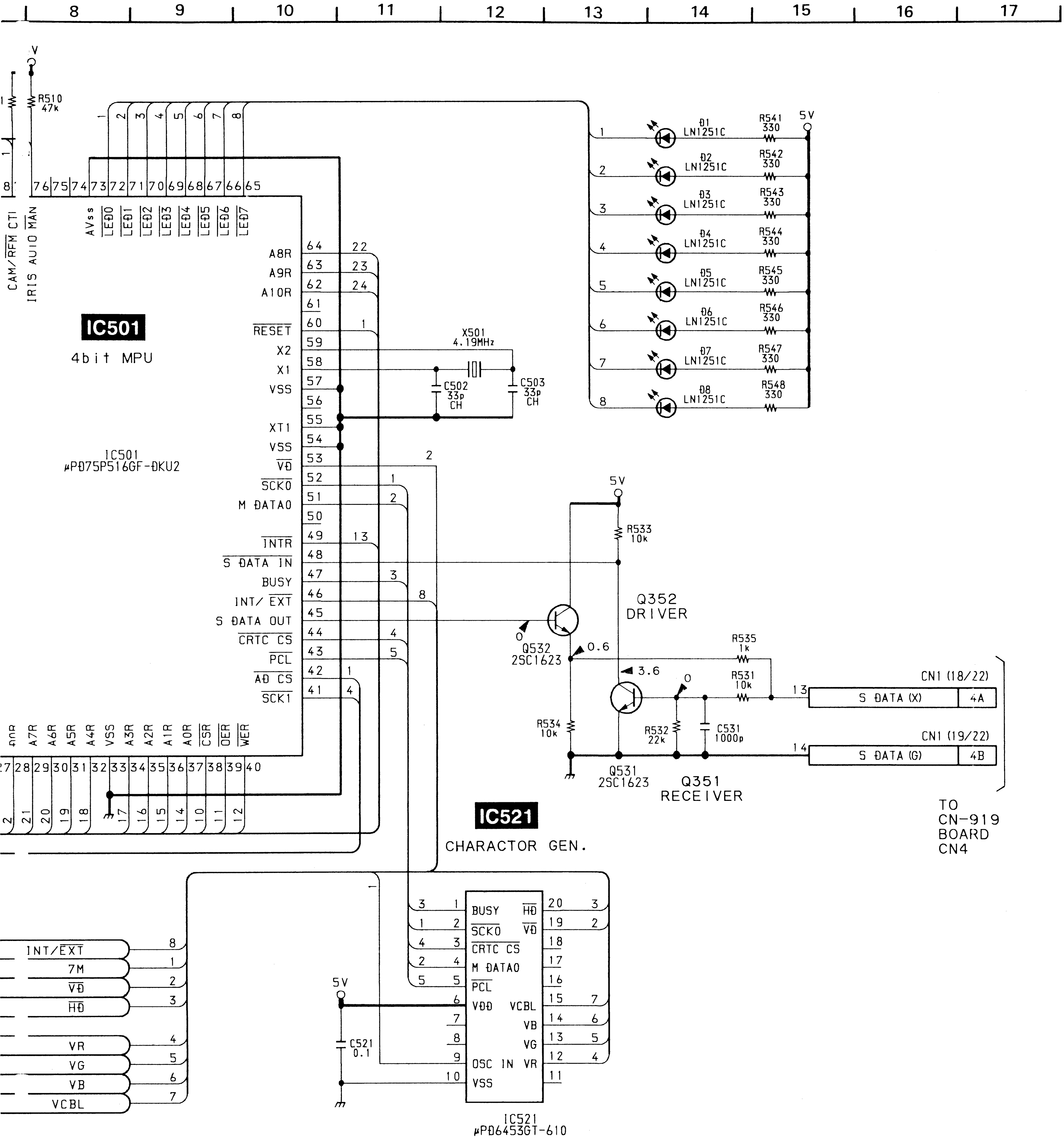


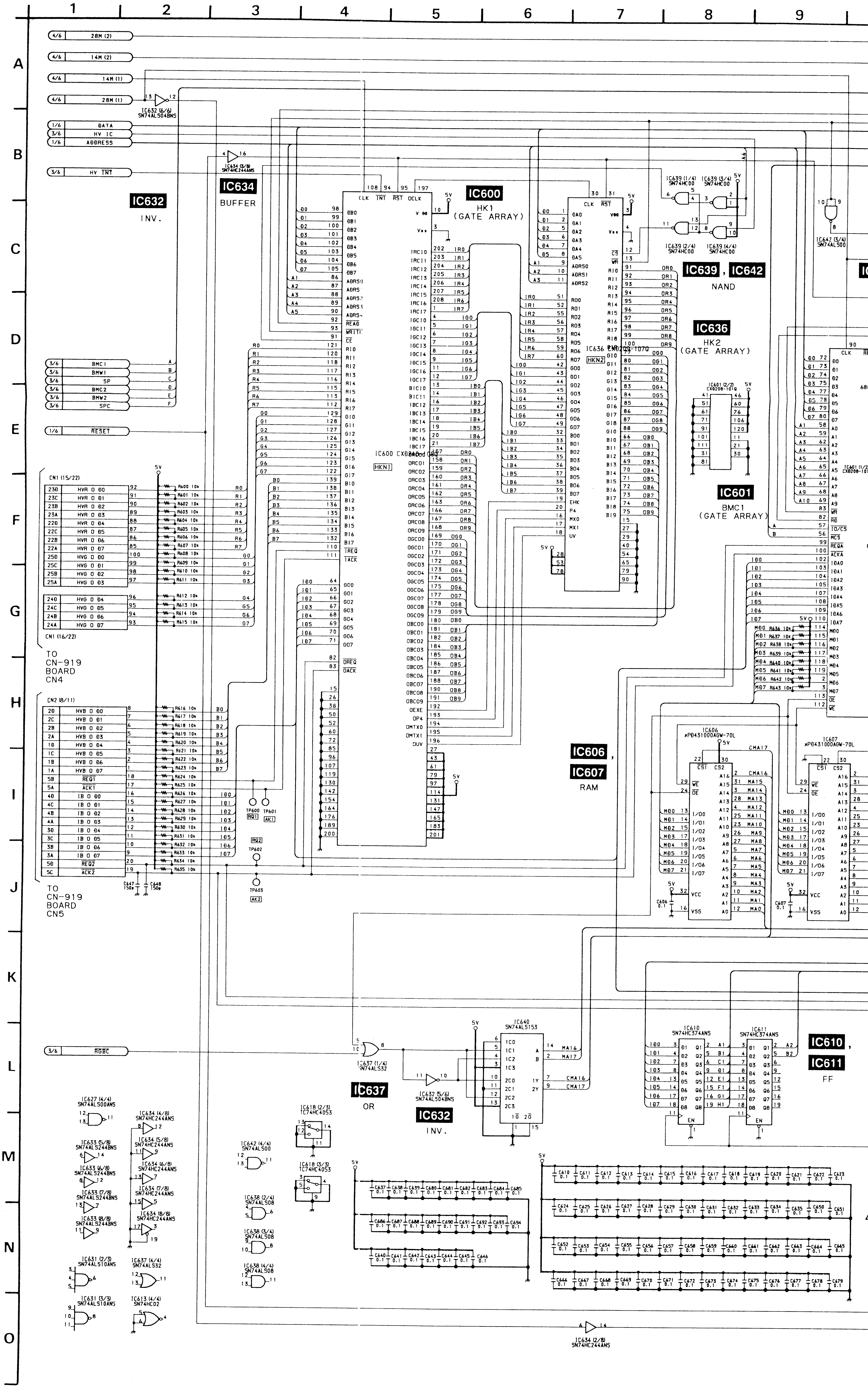
SYSTEM	SYSTEM
SY-194	SY-194

SY-194 — 5/6 — (SYSTEM PROCESS)

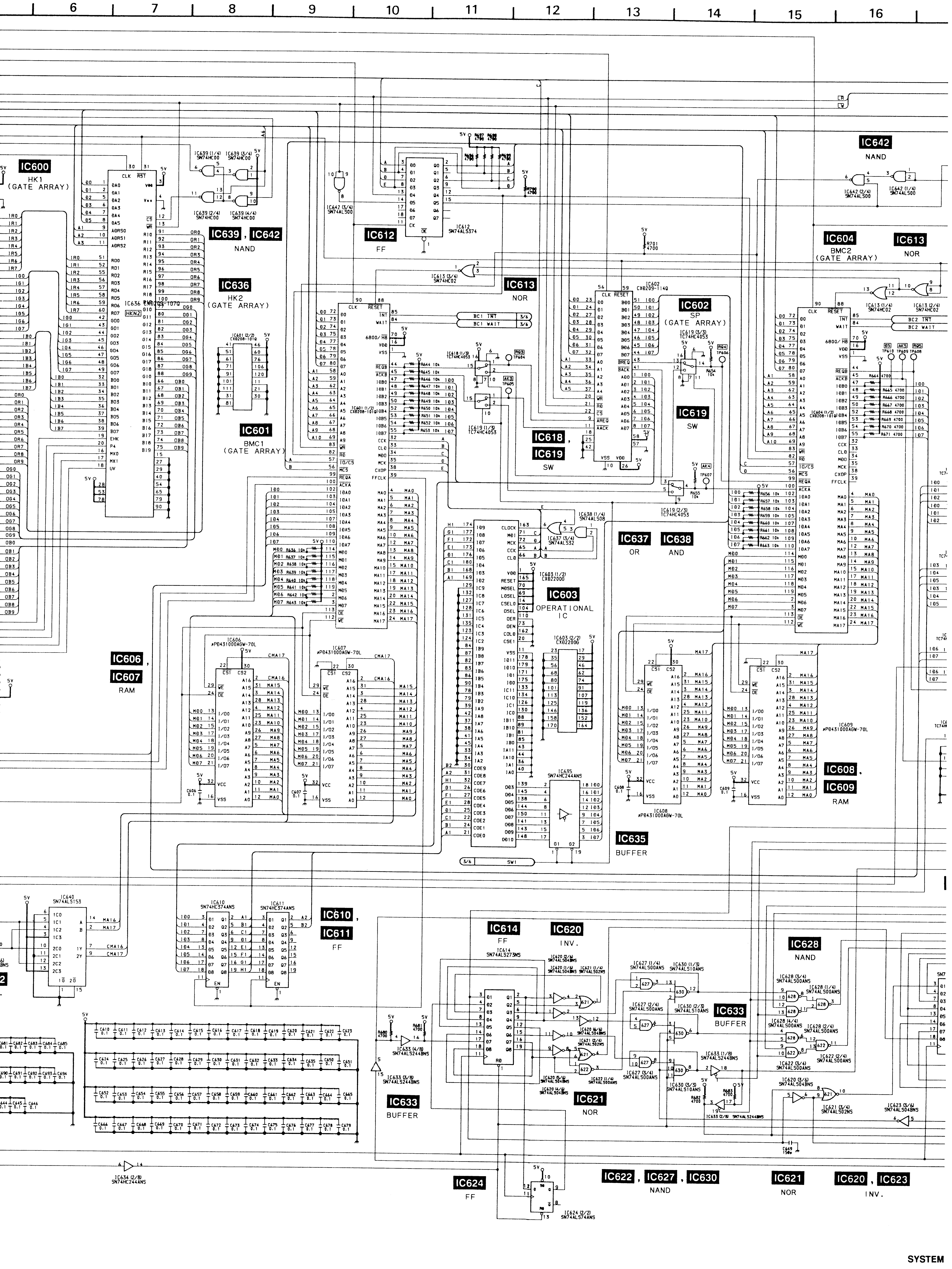

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
I
J
K
L
5V
R511 47k
R510 47k
CN1 (17/22)
5A CAM/REM CTL
5B IRIS AUTO/MAN
5C AD CS
5D S DATA1
6A M DATA1
6B SCK1
6C EOC
TO CN-919 BOARD CN4
C505 0.1
C504 0.1
C501 0.1
AVR
VDD
VDD
CL4
CL3
CL2
CL1
R512 47k
R513 47k
R514 47k
R515 47k
S DATA1
M DATA1
SCK1
EOC
D7R
D6R
D5R
D4R
CAM/REM CTL
IRIS AUTO MAN
AVss
LED0
LED1
LED2
LED3
LED4
LED5
LED6
LED7
IC501
4bit MPU
IC501
µPD75P516GF-DKU2
A8R
A9R
A10R
RESET
X2
X1
VSS
XT1
VSS
VD
SCK0
M DATA0
INTR
S DATA IN
BUSY
INT/EXT
S DATA OUT
CRTC CS
PCL
AD CS
SCK1
D3R
D2R
D1R
D0R
A7R
A6R
A5R
A4R
VSS
A3R
A2R
A1R
A0R
CSR
OER
WER
1/6 RESET
1/6 DR DATA
1/6 DR CONT
1/6 DR ADDR
D0R
D1R
D2R
D3R
D4R
D5R
D6R
D7R
CSR
OER
WER
INTR
A0R
A1R
A2R
A3R
A4R
A5R
A6R
A7R
A8R
A9R
A10R
4/6 INT/EXT
4/6 7M
4/6 VD
4/6 HD
2/6 VR
2/6 VG
2/6 VB
2/6 VCBL

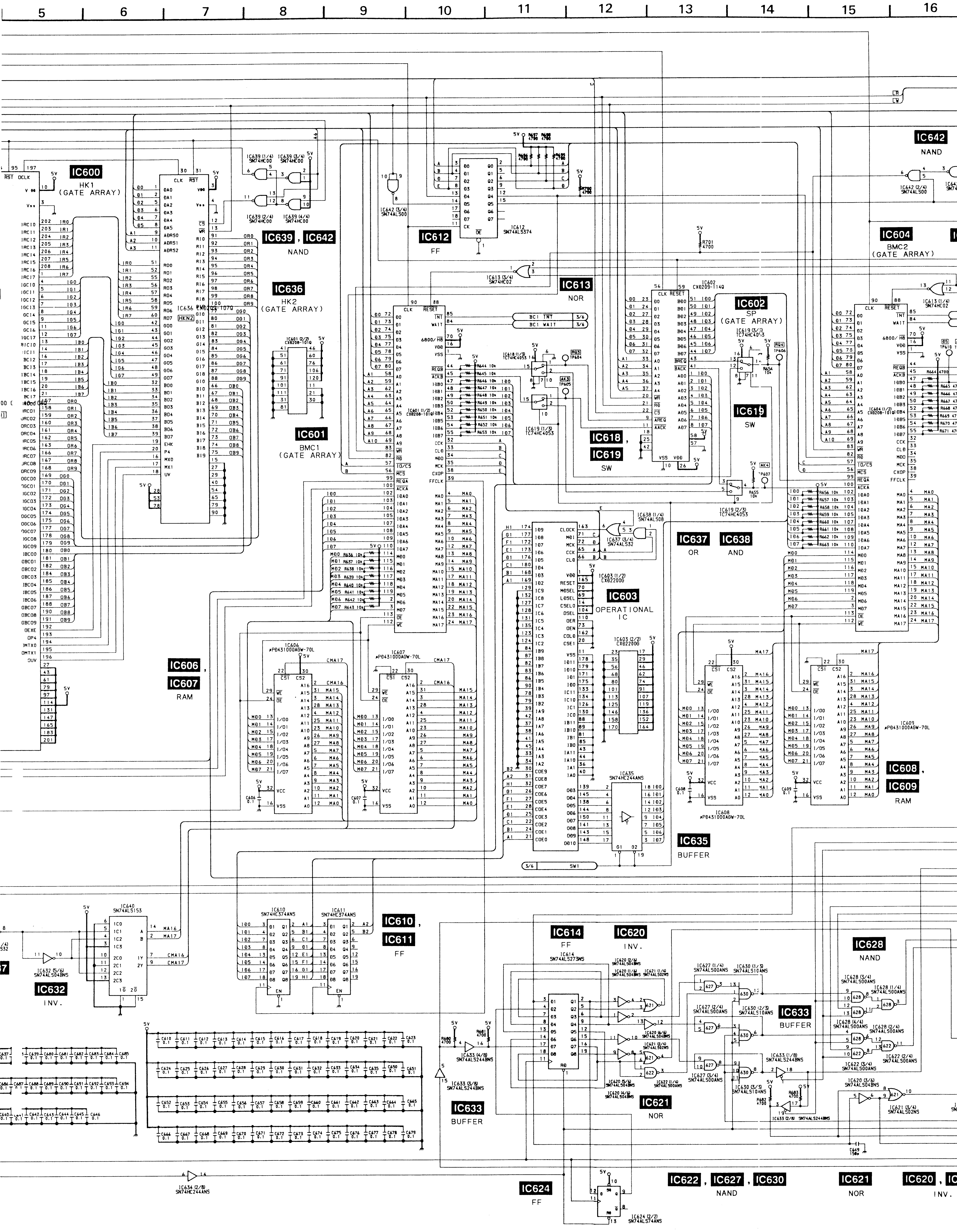

7
8
9
10
11
12
13
14
15
16
17
5V
R511 47k
R510 47k
CAM/REM CTL
IRIS AUTO MAN
AVss
LED0
LED1
LED2
LED3
LED4
LED5
LED6
LED7
IC501
4bit MPU
IC501
µPD75P516GF-DKU2
A8R
A9R
A10R
RESET
X2
X1
VSS
XT1
VSS
VD
SCK0
M DATA0
INTR
S DATA IN
BUSY
INT/EXT
S DATA OUT
CRTC CS
PCL
AD CS
SCK1
D3R D2R D1R D0R A7R A6R A5R A4R VSS A3R A2R A1R A0R CSR OER WER
X501 4.19MHz
C502 33p CH
C503 33p CH
D1 LN1251C
D2 LN1251C
D3 LN1251C
D4 LN1251C
D5 LN1251C
D6 LN1251C
D7 LN1251C
D8 LN1251C
R541 330
R542 330
R543 330
R544 330
R545 330
R546 330
R547 330
R548 330
R533 10k
Q352 DRIVER
Q532 2SC1623
0
0.6
3.6
R535 1k
R531 10k
R534 10k
R532 22k
C531 1000p
Q531 2SC1623
Q351 RECEIVER
CN1 (18/22)
S DATA (X) 4A
CN1 (19/22)
S DATA (G) 4B
TO CN-919 BOARD CN4
IC521
CHARACTOR GEN.
INT/EXT
7M
VD
HD
VR
VG
VB
VCBL
BUSY
SCK0
CRTC CS
M DATA0
PCL
VDD
OSC IN
VSS
HD
VD
VCBL
VB
VG
VR
C521 0.1
IC521
µPD6453GT-610

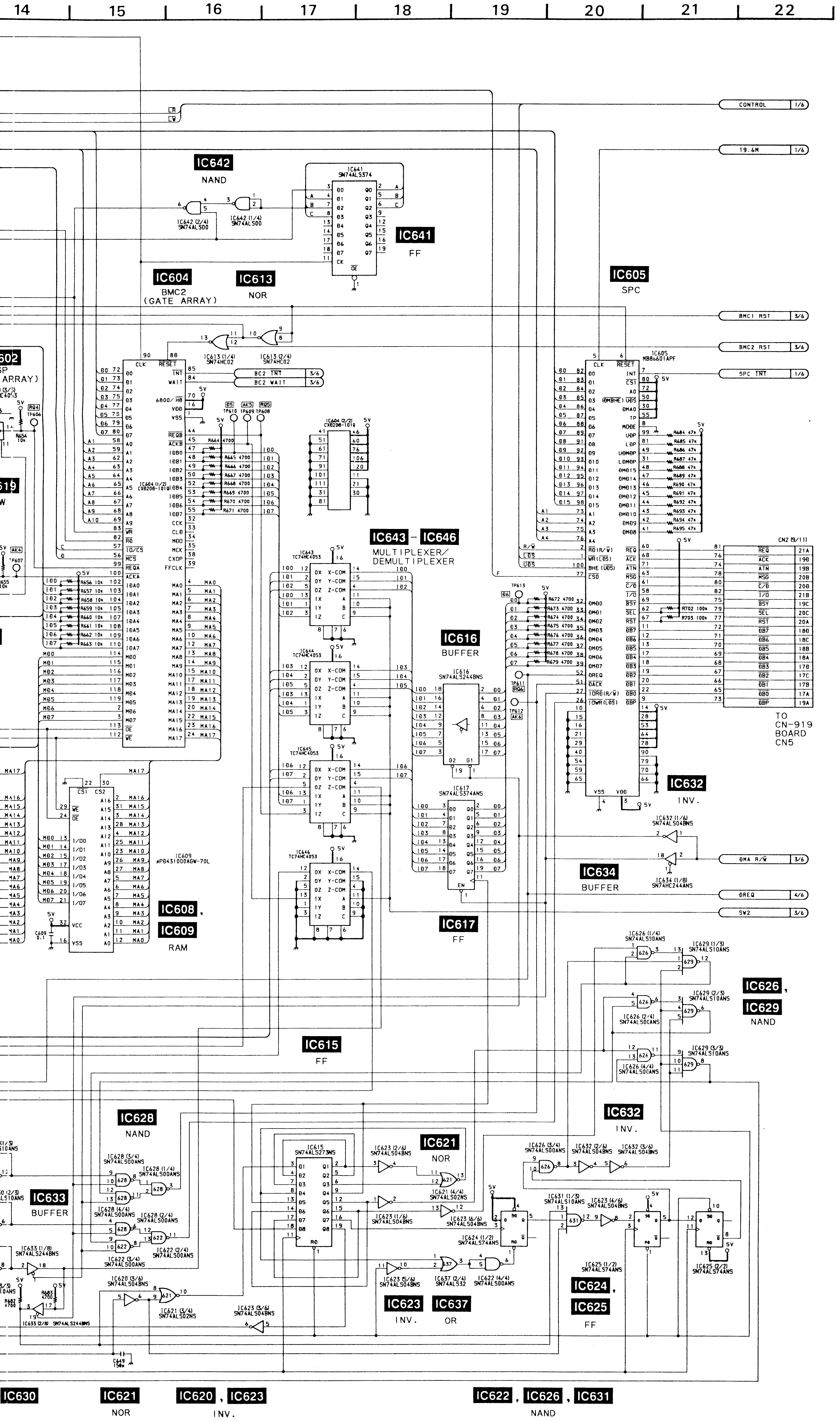

8
9
10
11
12
13
14
15
16
17
R510
47k
CAM/RFM CTI
IRIS AUIO MAN
AVss
LED0
LED1
LED2
LED3
LED4
LED5
LED6
LED7
IC501
4bit MPU
IC501
μPD75P516GF-DKU2
A8R
A9R
A10R
RESET
X2
X1
VSS
XT1
VSS
VD
SCK0
M DATA0
INTR
S DATA IN
BUSY
INT/EXT
S DATA OUT
CRTC CS
PCL
AD CS
SCK1
A7R
A6R
A5R
A4R
VSS
A3R
A2R
A1R
A0R
CSR
OER
WER
X501
4.19MHz
C502
33p
CH
C503
33p
CH
D1 LN1251C
D2 LN1251C
D3 LN1251C
D4 LN1251C
D5 LN1251C
D6 LN1251C
D7 LN1251C
D8 LN1251C
R541 330
R542 330
R543 330
R544 330
R545 330
R546 330
R547 330
R548 330
5V
R533
10k
Q352
DRIVER
Q532
2SC1623
0
0.6
3.6
R535
1k
R531
10k
R534
10k
R532
22k
C531
1000p
Q531
2SC1623
Q351
RECEIVER
CN1 (18/22)
S DATA (X)
4A
CN1 (19/22)
S DATA (G)
4B
TO
CN-919
BOARD
CN4
IC521
CHARACTOR GEN.
BUSY
HD
SCK0
VD
CRTC CS
M DATA0
PCL
VDD
VCBL
VB
VG
OSC IN
VR
VSS
C521
0.1
IC521
μPD6453GT-610
INT/EXT
7M
VD
HD
VR
VG
VB
VCBL


28M (2)
14M (2)
14M (1)
28M (1)
DATA
HV IC
ADDRESS
HV INT
IC632 (6/6) SN74ALS04BNS
IC634 (3/8) SN74HC244ANS
IC632
INV.
IC634
BUFFER
IC600
HK1
(GATE ARRAY)
IC600 CX0208-1040
IC636
HK2
(GATE ARRAY)
IC636 CX0209-1070
IC639 (1/4) SN74HC00
IC639 (3/4) SN74HC00
IC639 (2/4) SN74HC00
IC639 (4/4) SN74HC00
IC642 (3/4) SN74ALS00
IC639 , IC642
NAND
IC601
BMC1
(GATE ARRAY)
IC601 (2/2) CX0208-1010
BMC1
BMW1
SP
BMC2
BMW2
SPC
RESET
CN1 (15/22)
CN1 (16/22)
TO CN-919 BOARD CN4
CN2 (8/11)
TO CN-919 BOARD CN5
TP600 RQ1
TP601 AK1
TP602 RQ2
TP603 AK2
IC606 µPD431000AGW-70L
IC607 µPD431000AGW-70L
IC606 , IC607
RAM
IC610 SN74HC374ANS
IC611 SN74HC374ANS
IC610 , IC611
FF
IC640 SN74ALS153
RGBC
IC637 (1/4) SN74ALS32
IC637
OR
IC632 (5/6) SN74ALS04BNS
IC632
INV.
IC627 (4/4) SN74ALS00ANS
IC633 (5/8) SN74ALS244BNS
IC633 (6/8) SN74ALS244BNS
IC633 (7/8) SN74ALS244BNS
IC633 (8/8) SN74ALS244BNS
IC634 (4/8) SN74HC244ANS
IC634 (5/8) SN74HC244ANS
IC634 (6/8) SN74HC244ANS
IC634 (7/8) SN74HC244ANS
IC634 (8/8) SN74HC244ANS
IC631 (2/3) SN74ALS10ANS
IC631 (3/3) SN74ALS10ANS
IC637 (4/4) SN74ALS32
IC613 (4/4) SN74HC02
IC642 (4/4) SN74ALS00
IC618 (2/3) TC74HC4053
IC618 (3/3) TC74HC4053
IC638 (2/4) SN74ALS08
IC638 (3/4) SN74ALS08
IC638 (4/4) SN74ALS08
IC634 (2/8) SN74HC244ANS
5V

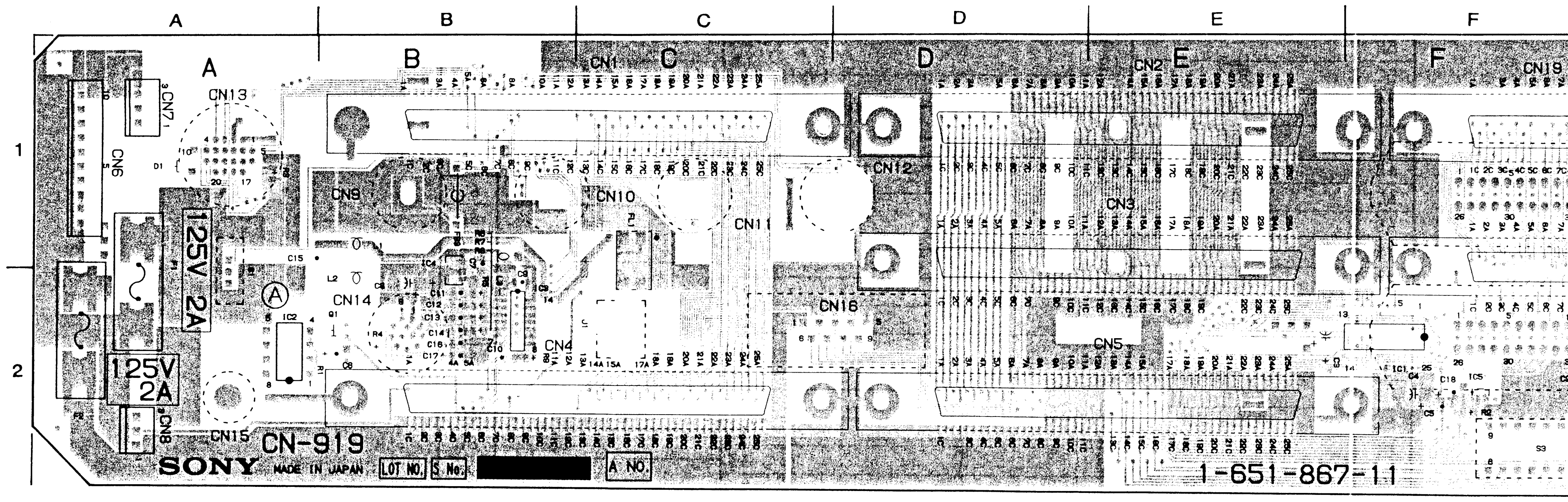
SYSTEM SY-194 SYSTEM SY-194

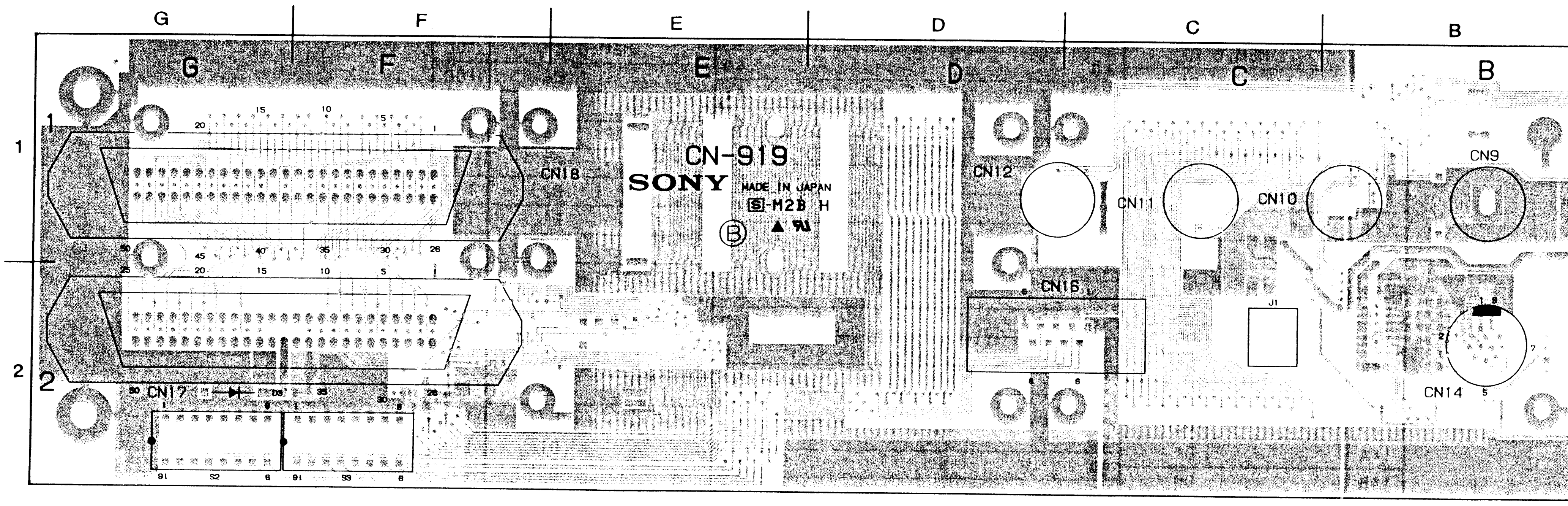

6
7
8
9
10
11
12
13
14
15
16
IC600
HK1
(GATE ARRAY)
IC639, IC642
NAND
IC612
FF
IC642
NAND
IC604
BMC2
(GATE ARRAY)
IC613
NOR
IC636
HK2
(GATE ARRAY)
IC601
BMC1
(GATE ARRAY)
IC613
NOR
IC602
SP
(GATE ARRAY)
IC618, IC619
SW
IC619
SW
IC637
OR
IC638
AND
IC603
OPERATIONAL IC
IC606, IC607
RAM
IC608, IC609
RAM
IC635
BUFFER
IC610, IC611
FF
IC614
FF
IC620
INV.
IC628
NAND
IC633
BUFFER
IC633
BUFFER
IC621
NOR
IC624
FF
IC622, IC627, IC630
NAND
IC621
NOR
IC620, IC623
INV.


5
6
7
8
9
10
11
12
13
14
15
16
IC600
HK1
(GATE ARRAY)
IC639 , IC642
NAND
IC636
HK2
(GATE ARRAY)
IC612
FF
IC613
NOR
IC642
NAND
IC604
BMC2
(GATE ARRAY)
IC602
SP
(GATE ARRAY)
IC601
BMC1
(GATE ARRAY)
IC618 ,
IC619
SW
IC619
SW
IC637
OR
IC638
AND
IC603
OPERATIONAL
IC
IC606 ,
IC607
RAM
IC608 ,
IC609
RAM
IC635
BUFFER
IC610 ,
IC611
FF
IC632
INV.
IC614
FF
IC620
INV.
IC628
NAND
IC633
BUFFER
IC621
NOR
IC633
BUFFER
IC624
FF
IC622 , IC627 , IC630
NAND
IC621
NOR
IC620 , IC
INV.
IC636 CX0209-1070
IC602 CX0209-1140
IC601 (1/2) CX0208-1010
IC604 (1/2) CX0208-1010
IC612 SN74ALS374
IC640 SN74ALS153
IC610 SN74HC374ANS
IC611 SN74HC374ANS
IC614 SN74ALS273NS
IC635 SN74HC244ANS
IC603 (1/2) CX022006
IC603 (2/2) CX022006
IC606 μPD431000AGW-70L
IC607 μPD431000AGW-70L
IC608 μPD431000AGW-70L
IC609 μPD431000AGW-70L
IC624 (2/2) SN74ALS74ANS
IC634 (2/8) SN74HC244ANS
IC619 (1/3) TC74HC4053
IC619 (2/3) TC74HC4053
IC618 (1/3) TC74HC4053
BC1 INT
BC1 WAIT
SW1


14
15
16
17
18
19
20
21
22
CONTROL 1/6
19.6M 1/6
BMC1 RST 3/6
BMC2 RST 3/6
SPC INT 1/6
IC642
NAND
IC641
FF
IC641 SN74ALS374
IC642 (2/4) SN74ALS00
IC642 (1/4) SN74ALS00
IC604
BMC2
(GATE ARRAY)
IC613
NOR
IC613 (1/4) SN74HC02
IC613 (2/4) SN74HC02
IC605
SPC
IC605 MB86601APF
BC2 INT 3/6
BC2 WAIT 3/6
IC604 (1/2) CXD208-101Q
IC604 (2/2) CXD208-101Q
IC643 - IC646
MULTIPLEXER/
DEMULTIPLEXER
IC643 TC74HC4053
IC644 TC74HC4053
IC645 TC74HC4053
IC646 TC74HC4053
IC616
BUFFER
IC616 SN74ALS244BNS
IC617 SN74ALS374ANS
IC617
FF
IC608,
IC609
RAM
IC609 μPB431000AGW-70L
CN2 (9/11)
TO
CN-919
BOARD
CN5
IC632
INV.
IC632 (1/6) SN74ALS04BNS
IC634
BUFFER
IC634 (1/8) SN74HC244ANS
DMA R/W 3/6
DREQ 4/6
SW2 3/6
IC626,
IC629
NAND
IC626 (1/4) SN74ALS00ANS
IC629 (1/3) SN74ALS10ANS
IC629 (2/3) SN74ALS10ANS
IC626 (2/4) SN74ALS00ANS
IC629 (3/3) SN74ALS10ANS
IC626 (4/4) SN74ALS00ANS
IC615
FF
IC615 SN74ALS273NS
IC628
NAND
IC628 (3/4) SN74ALS00ANS
IC628 (1/4) SN74ALS00ANS
IC628 (4/4) SN74ALS00ANS
IC628 (2/4) SN74ALS00ANS
IC622 (3/4) SN74ALS00ANS
IC622 (2/4) SN74ALS00ANS
IC633
BUFFER
IC633 (1/8) SN74ALS244BNS
IC633 (2/8) SN74ALS244BNS
IC620 (3/6) SN74ALS04BNS
IC621 (3/4) SN74ALS02NS
IC621
NOR
IC621 (4/4) SN74ALS02NS
IC623 (2/6) SN74ALS04BNS
IC623 (1/6) SN74ALS04BNS
IC623 (6/6) SN74ALS04BNS
IC623 (5/6) SN74ALS04BNS
IC623 (3/6) SN74ALS04BNS
IC637 (2/4) SN74ALS32
IC627 (4/4) SN74ALS00ANS
IC624 (1/2) SN74ALS74ANS
IC623
INV.
IC637
OR
IC626 (3/4) SN74ALS00ANS
IC632 (2/6) SN74ALS04BNS
IC632 (3/6) SN74ALS04BNS
IC631 (1/3) SN74ALS10ANS
IC623 (4/6) SN74ALS04BNS
IC625 (1/2) SN74ALS74ANS
IC625 (2/2) SN74ALS74ANS
IC624,
IC625
FF
IC630
IC621
NOR
IC620, IC623
INV.
IC622, IC626, IC631
NAND

CN-919 (CONNECTOR)

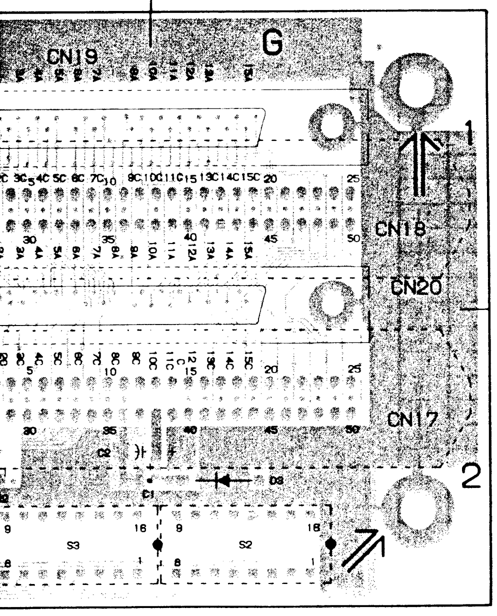

A
B
C
D
E
F
1
2
CN13
CN7
CN6
D1
CN9
CN10
CN11
CN12
CN1
CN2
CN3
CN4
CN5
CN14
CN15
CN16
CN19
CN8
IC1
IC2
IC5
125V 2A
125V 2A
CN-919
SONY MADE IN JAPAN
LOT NO.
S No.
A NO.
1-651-867-11


G
F
E
D
C
B
1
2
CN18
CN-919
SONY MADE IN JAPAN
S-M2B H
CN12
CN11
CN10
CN9
CN16
J1
CN14
CN17
D3
S2
S3

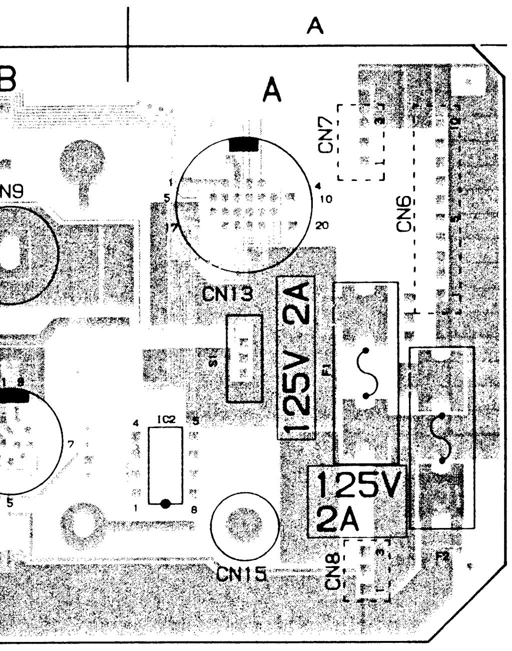
CN-919(1-651-867-11)

CN1	C-1	F1	A-2
CN2	E-1	F2	A-2
CN3	E-1		
CN4	C-2	IC1	F-2
CN5	E-2	IC2	A-2
CN6	A-1	IC3	B-2
CN7	A-1	IC4	B-2
CN8	A-2	IC5	F-2
CN19	F-1		
CN20	F-1	Q1	B-2
D1	A-1	*S1	A-2
*D3	G-2	*S2	G-2
		*S3	F-2
FB3	B-1		
FL1	C-1		

* : Soldering side

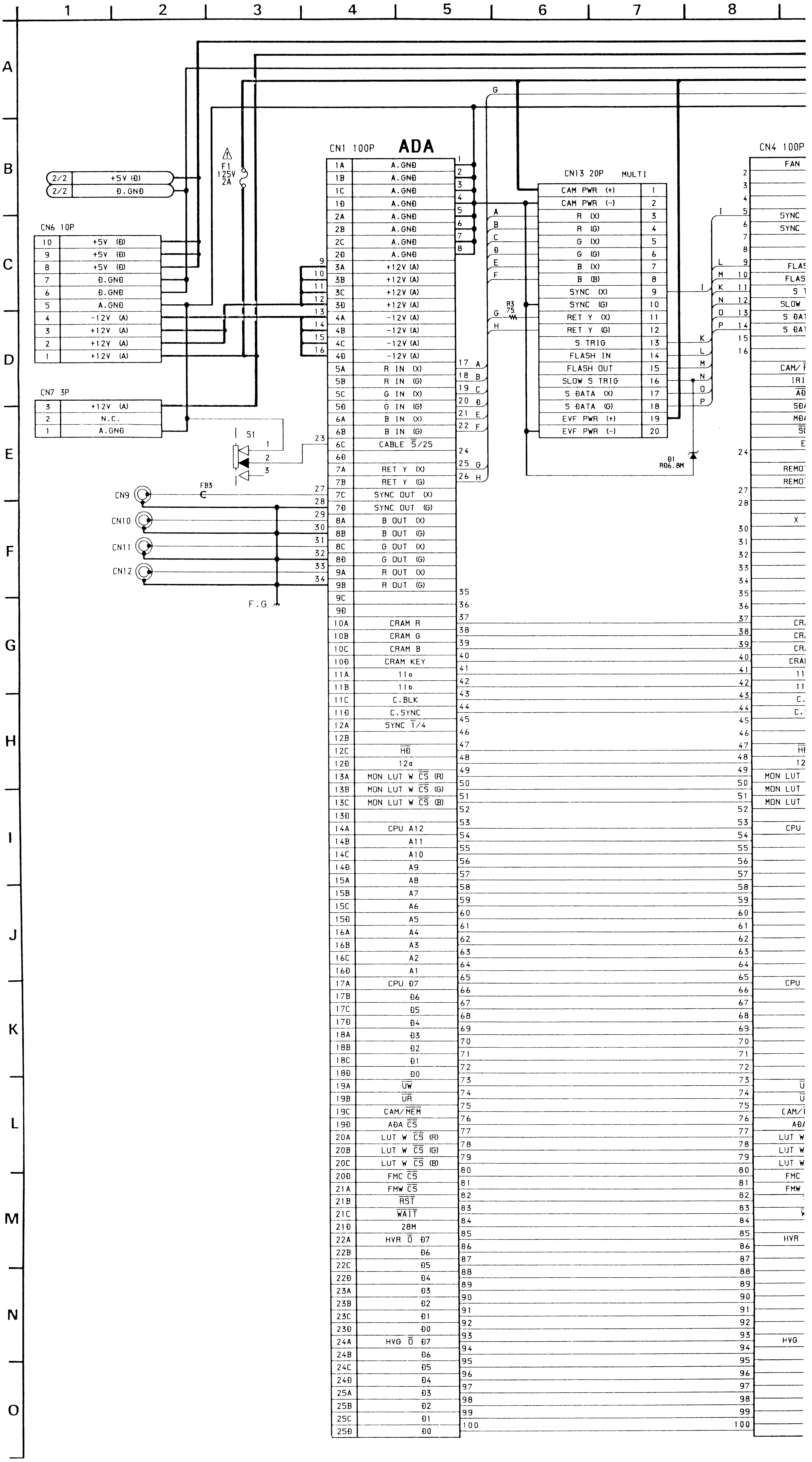

G
CN19
CN18
CN20
CN17
1
2
S3
S2

CN-919 —COMPONENT SIDE—
1-651-867-11


A
B
CN7
CN6
CN13
125V 2A
125V 2A
IC2
CN15
CN8

CN-919 —SOLDERING SIDE—
1-651-867-11

CN-919 — 1/3 — (CONNECTOR)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A
B
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D
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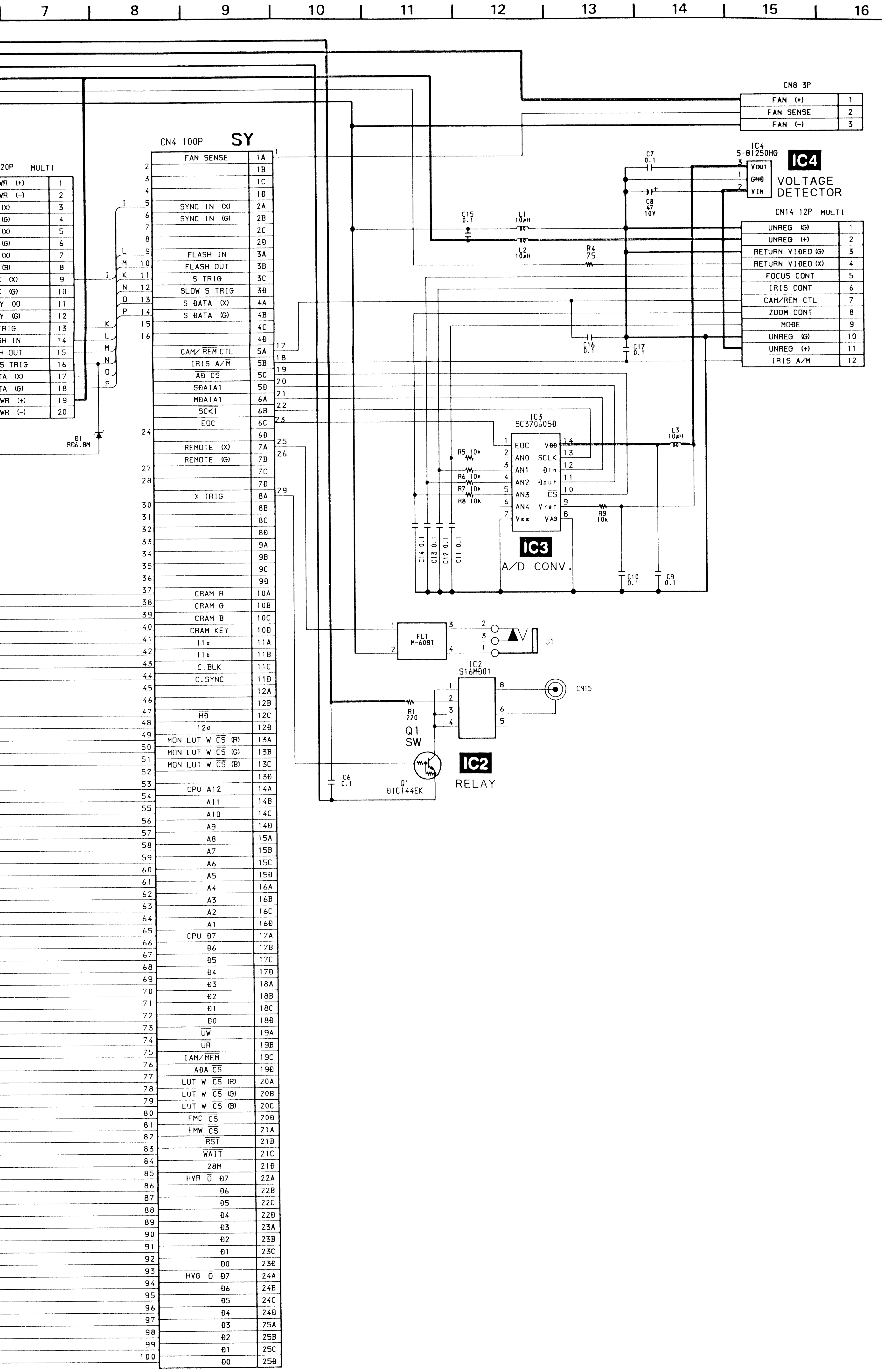
H
I
J
K
L
M
N
O
2/2 +5V (D)
2/2 D.GND
F1 125V 2A
CN6 10P
10 +5V (D)
9 +5V (D)
8 +5V (D)
7 D.GND
6 D.GND
5 A.GND
4 -12V (A)
3 +12V (A)
2 +12V (A)
1 +12V (A)
CN7 3P
3 +12V (A)
2 N.C.
1 A.GND
S1
CN9
CN10
CN11
CN12
FB3
F.G
CN1 100P ADA
1A A.GND
1B A.GND
1C A.GND
1D A.GND
2A A.GND
2B A.GND
2C A.GND
2D A.GND
3A +12V (A)
3B +12V (A)
3C +12V (A)
3D +12V (A)
4A -12V (A)
4B -12V (A)
4C -12V (A)
4D -12V (A)
5A R IN (X)
5B R IN (G)
5C G IN (X)
5D G IN (G)
6A B IN (X)
6B B IN (G)
6C CABLE 5/25
7A RET Y (X)
7B RET Y (G)
7C SYNC OUT (X)
7D SYNC OUT (G)
8A B OUT (X)
8B B OUT (G)
8C G OUT (X)
8D G OUT (G)
9A R OUT (X)
9B R OUT (G)
10A CRAM R
10B CRAM G
10C CRAM B
10D CRAM KEY
11A 11a
11B 11b
11C C.BLK
11D C.SYNC
12A SYNC 1/4
12C HD
12D 12d
13A MON LUT W CS (R)
13B MON LUT W CS (G)
13C MON LUT W CS (B)
14A CPU A12
14B A11
14C A10
14D A9
15A A8
15B A7
15C A6
15D A5
16A A4
16B A3
16C A2
16D A1
17A CPU D7
17B D6
17C D5
17D D4
18A D3
18B D2
18C D1
18D D0
19A UW
19B UR
19C CAM/MEM
19D ADA CS
20A LUT W CS (R)
20B LUT W CS (G)
20C LUT W CS (B)
20D FMC CS
21A FMW CS
21B RST
21C WAIT
21D 28M
22A HVR D D7
22B D6
22C D5
22D D4
23A D3
23B D2
23C D1
23D D0
24A HVG D D7
24B D6
24C D5
24D D4
25A D3
25B D2
25C D1
25D D0
CN13 20P MULTI
1 CAM PWR (+)
2 CAM PWR (-)
3 R (X)
4 R (G)
5 G (X)
6 G (G)
7 B (X)
8 B (B)
9 SYNC (X)
10 SYNC (G)
11 RET Y (X)
12 RET Y (G)
13 S TRIG
14 FLASH IN
15 FLASH OUT
16 SLOW S TRIG
17 S DATA (X)
18 S DATA (G)
19 EVF PWR (+)
20 EVF PWR (-)
R3 75
D1 RD6.8M
CN4 100P
FAN
SYNC
SYNC
FLAS
FLAS
S T
SLOW
S DAT
S DAT
CAM/F
IRI
AD
SDA
MDA
SC
E
REMOT
REMOT
X
CRA
CRA
CRA
CRAI
11
11
C.
C.
HE
12
MON LUT
MON LUT
MON LUT
CPU
CPU
U
U
CAM/
ADA
LUT W
LUT W
LUT W
FMC
FMW
W
HVR
HVG


7
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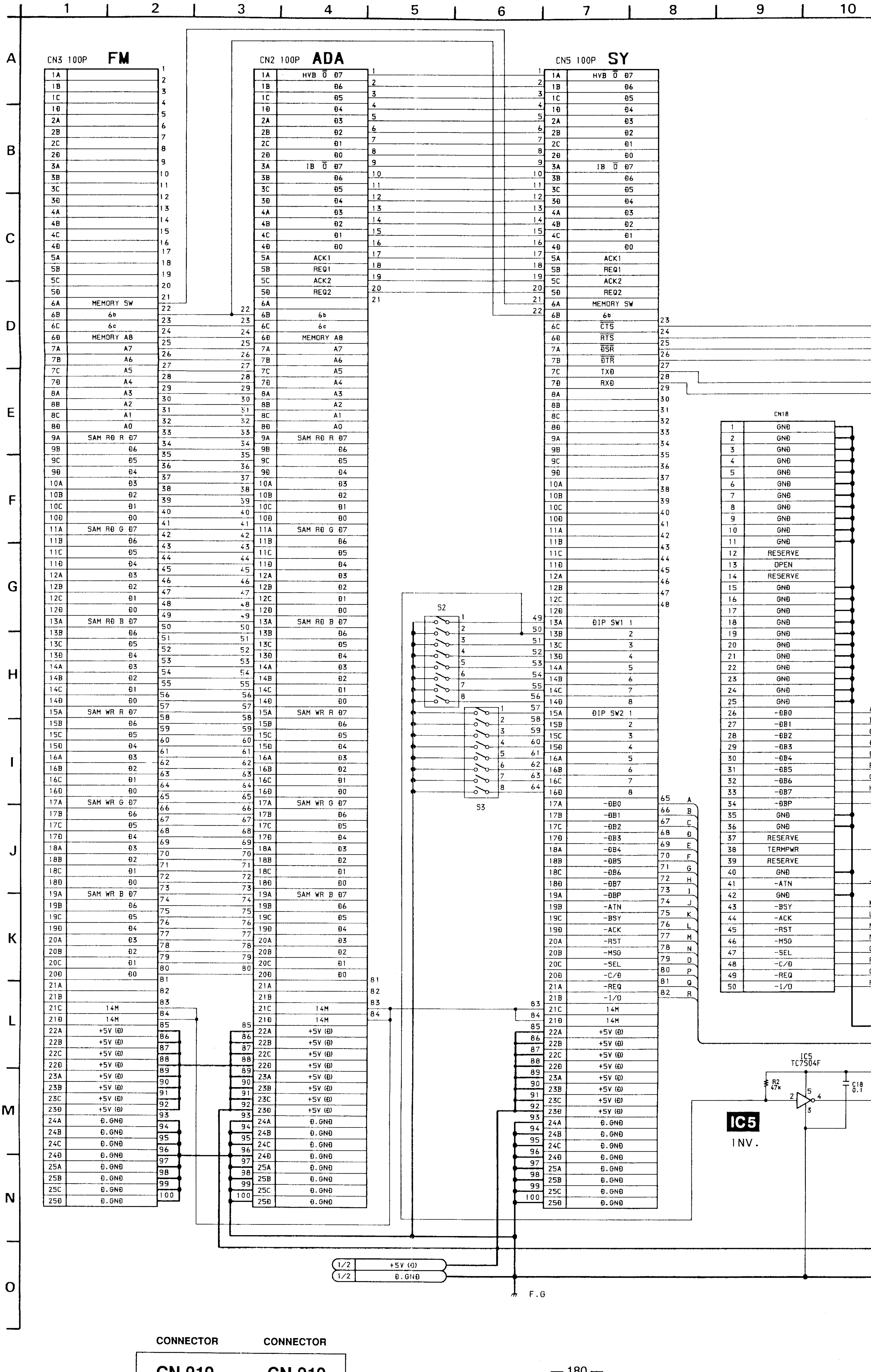
16
CN8 3P
FAN (+) 1
FAN SENSE 2
FAN (-) 3
CN4 100P
SY
FAN SENSE 1A
SYNC IN (X) 2A
SYNC IN (G) 2B
FLASH IN 3A
FLASH OUT 3B
S TRIG 3C
SLOW S TRIG 3D
S DATA (X) 4A
S DATA (G) 4B
CAM/REM CTL 5A
IRIS A/M 5B
AD CS 5C
SDATA1 5D
MDATA1 6A
SCK1 6B
EOC 6C
REMOTE (X) 7A
REMOTE (G) 7B
X TRIG 8A
CRAM R 10A
CRAM G 10B
CRAM B 10C
CRAM KEY 10D
11a 11A
11b 11B
C.BLK 11C
C.SYNC 11D
HD 12C
12d 12D
MON LUT W CS (R) 13A
MON LUT W CS (G) 13B
MON LUT W CS (B) 13C
CPU A12 14A
A11 14B
A10 14C
A9 14D
A8 15A
A7 15B
A6 15C
A5 15D
A4 16A
A3 16B
A2 16C
A1 16D
CPU D7 17A
D6 17B
D5 17C
D4 17D
D3 18A
D2 18B
D1 18C
D0 18D
UW 19A
UR 19B
CAM/MEM 19C
ADA CS 19D
LUT W CS (R) 20A
LUT W CS (G) 20B
LUT W CS (B) 20C
FMC CS 20D
FMW CS 21A
RST 21B
WAIT 21C
28M 21D
HVR O D7 22A
D6 22B
D5 22C
D4 22D
D3 23A
D2 23B
D1 23C
D0 23D
HVG O D7 24A
D6 24B
D5 24C
D4 24D
D3 25A
D2 25B
D1 25C
D0 25D
20P MULTI
D1 RD6.8M
CN14 12P MULTI
UNREG (G) 1
UNREG (+) 2
RETURN VIDEO (G) 3
RETURN VIDEO (X) 4
FOCUS CONT 5
IRIS CONT 6
CAM/REM CTL 7
ZOOM CONT 8
MODE 9
UNREG (G) 10
UNREG (+) 11
IRIS A/M 12
IC4 S-81250HG
IC4
VOLTAGE DETECTOR
VOUT GND VIN
C7 0.1
C8 47 10V
C15 0.1
L1 10μH
L2 10μH
R4 75
C16 0.1
C17 0.1
IC3 SC370605D
EOC AN0 AN1 AN2 AN3 AN4 Vss VDD SCLK Din Dout CS Vref VAG
R5 10k
R6 10k
R7 10k
R8 10k
R9 10k
L3 10μH
C14 0.1
C13 0.1
C12 0.1
C11 0.1
C10 0.1
C9 0.1
IC3
A/D CONV.
FL1 M-608T
J1
IC2 S16M001
CN15
R1 220
Q1 SW
Q1 DTC144EK
C6 0.1
IC2
RELAY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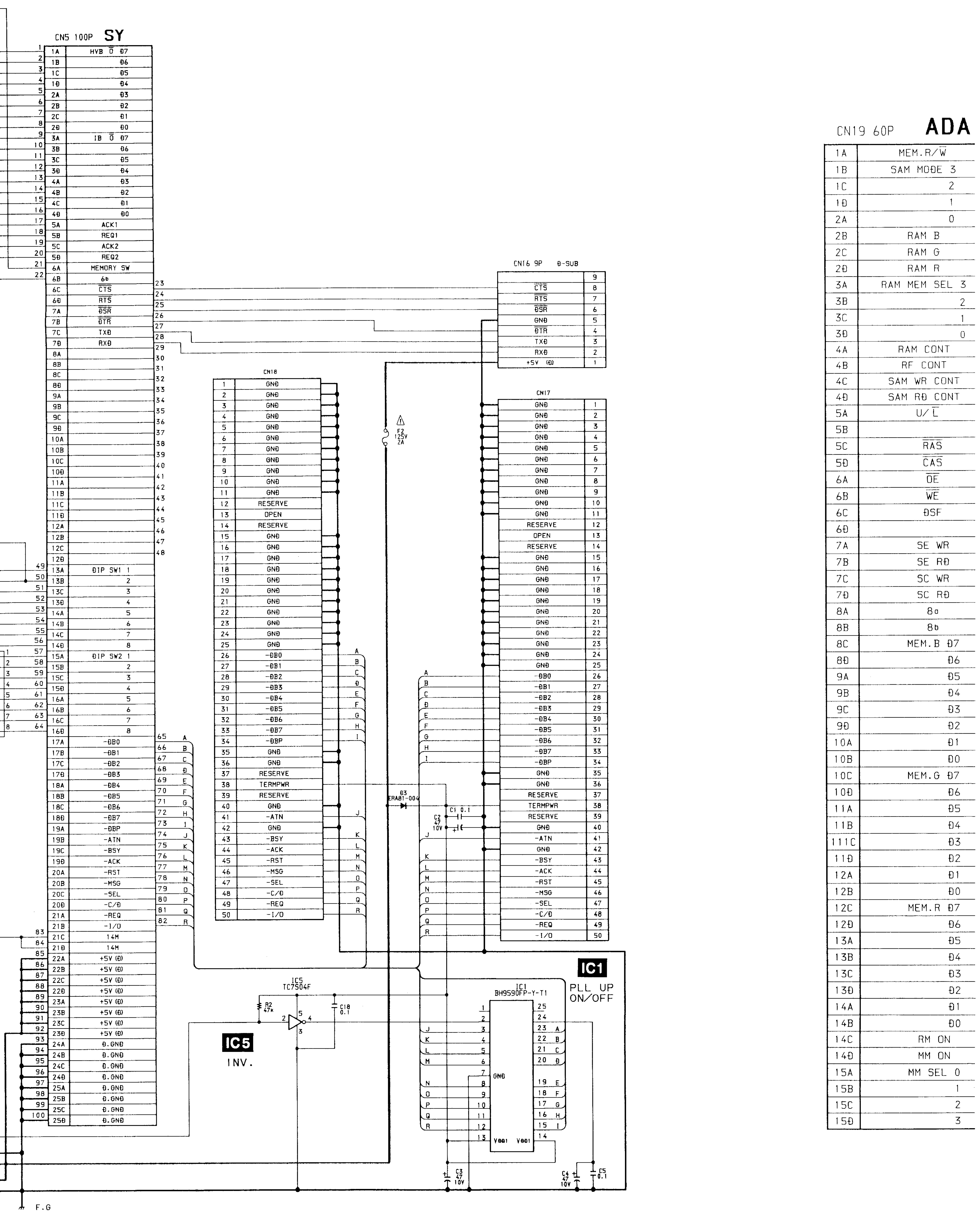
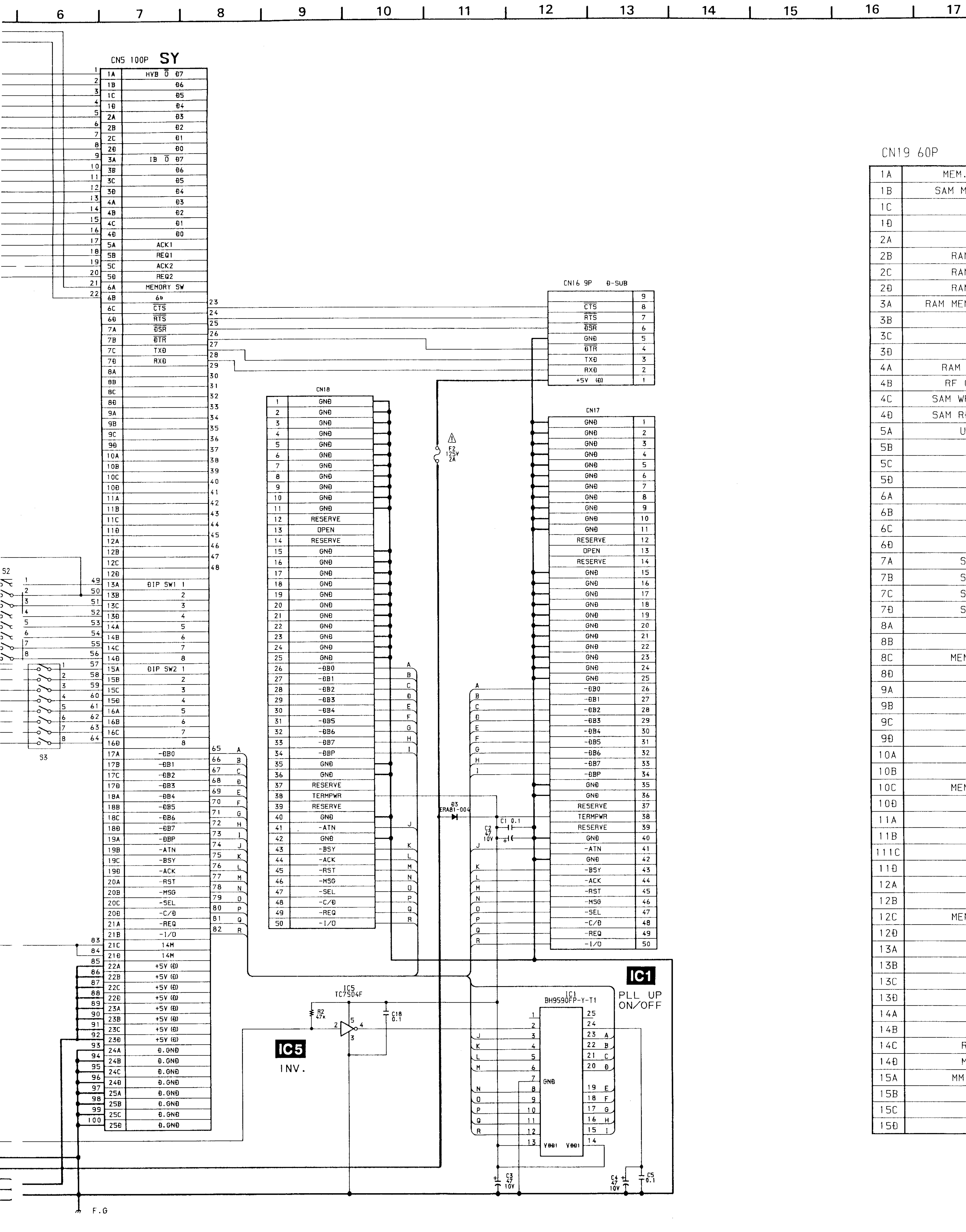
L
M
N
O
CN3 100P FM
MEMORY SW
6b
6c
MEMORY A8
A7
A6
A5
A4
A3
A2
A1
A0
SAM RD R D7
SAM RD G D7
SAM RD B D7
SAM WR R D7
SAM WR G D7
SAM WR B D7
D6
D5
D4
D3
D2
D1
D0
14M
+5V (D)
D.GND
CN2 100P ADA
HVB D̄ D7
IB D̄ D7
ACK1
REQ1
ACK2
REQ2
CN5 100P SY
CTS
RTS
DSR
DTR
TXD
RXD
DIP SW1
DIP SW2
-DB0
-DB1
-DB2
-DB3
-DB4
-DB5
-DB6
-DB7
-DBP
-ATN
-BSY
-ACK
-RST
-MSG
-SEL
-C/D
-REQ
-I/O
S2
S3
CN18
GND
RESERVE
OPEN
TERMPWR
IC5
TC7S04F
R2
47k
C18
0.1
IC5
INV.
1/2
+5V (D)
1/2
D.GND
F.G

CONNECTOR **CONNECTOR**

CN-919 **CN-919**


CN5 100P SY
HVB D D7
IB D D7
ACK1
REQ1
ACK2
REQ2
MEMORY SW
CTS
RTS
DSR
DTR
TXD
RXD
DIP SW1
DIP SW2
-DB0
-DB1
-DB2
-DB3
-DB4
-DB5
-DB6
-DB7
-DBP
-ATN
-BSY
-ACK
-RST
-MSG
-SEL
-C/D
-REQ
-I/O
14M
+5V (D)
D.GND
CN16 9P D-SUB
GND
+5V (D)
CN18
CN17
RESERVE
OPEN
TERMPWR
F2 125V 2A
D3 ERA81-004
C1 0.1
C2 47 10V
IC5 TC7S04F
R2 47k
C18 0.1
IC5
INV.
IC1 BH9590FP-Y-T1
IC1
PLL UP ON/OFF
VDD1
C3 47 10V
C4 47 10V
C5 0.1
F.G
CN19 60P ADA
MEM.R/W
SAM MODE 3
RAM B
RAM G
RAM R
RAM MEM SEL 3
RAM CONT
RF CONT
SAM WR CONT
SAM RD CONT
U/L
RAS
CAS
OE
WE
DSF
SE WR
SE RD
SC WR
SC RD
8a
8b
MEM.B D7
MEM.G D7
MEM.R D7
RM ON
MM ON
MM SEL 0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11
12
13
14
15
16
17
CN5 100P
SY
HYB D D7
D6
D5
D4
D3
D2
D1
D0
IB D D7
ACK1
REQ1
ACK2
REQ2
MEMORY SW
6b
CTS
RTS
DSR
DTR
TXD
RXD
DIP SW1
DIP SW2
-DB0
-DB1
-DB2
-DB3
-DB4
-DB5
-DB6
-DB7
-DBP
-ATN
-BSY
-ACK
-RST
-MSG
-SEL
-C/D
-REQ
-I/O
14M
+5V (D)
D.GND
S2
S3
F.G
CN16 9P D-SUB
GND
+5V (D)
CN18
CN17
RESERVE
OPEN
TERMPWR
F2
125V
2A
D3
ERA81-004
C1 0.1
C2
47
10V
IC5
TC7S04F
R2
47k
C18
0.1
IC5
INV.
IC1
BH9590FP-Y-T1
IC1
PLL UP
ON/OFF
GND
VDD1
C3
47
10V
C4
47
10V
C5
0.1
CN19 60P
MEM.
SAM M
RAM MEM
RAM
RF
SAM WR
SAM R
MEM
MMI

CN19 60P **ADA** CN20 60P **FM**

1A	MEM.R/$\overline{W}$	1	1	MEM.R/$\overline{W}$	1A
1B	SAM MODE 3	2	2	SAM MODE 3	1B
1C	2	3	3	2	1C
1D	1	4	4	1	1D
2A	0	5	5	0	2A
2B	RAM B	6	6	RAM B	2B
2C	RAM G	7	7	RAM G	2C
2D	RAM R	8	8	RAM R	2D
3A	RAM MEM SEL 3	9	9	RAM MEM SEL 3	3A
3B	2	10	10	2	3B
3C	1	11	11	1	3C
3D	0	12	12	0	3D
4A	RAM CONT	13	13	RAM CONT	4A
4B	RF CONT	14	14	RF CONT	4B
4C	SAM WR CONT	15	15	SAM WR CONT	4C
4D	SAM RD CONT	16	16	SAM RD CONT	4D
5A	U/$\overline{L}$	17	17	U/$\overline{L}$	5A
5B		18	18		5B
5C	$\overline{RAS}$	19	19	$\overline{RAS}$	5C
5D	$\overline{CAS}$	20	20	$\overline{CAS}$	5D
6A	$\overline{OE}$	21	21	$\overline{OE}$	6A
6B	$\overline{WE}$	22	22	$\overline{WE}$	6B
6C	DSF	23	23	DSF	6C
6D		24	24		6D
7A	SE WR	25	25	SE WR	7A
7B	SE RD	26	26	SE RD	7B
7C	SC WR	27	27	SC WR	7C
7D	SC RD	28	28	SC RD	7D
8A	8a	29	29	8a	8A
8B	8b	30	30	8b	8B
8C	MEM.B D7	31	31	MEM.B D7	8C
8D	D6	32	32	D6	8D
9A	D5	33	33	D5	9A
9B	D4	34	34	D4	9B
9C	D3	35	35	D3	9C
9D	D2	36	36	D2	9D
10A	D1	37	37	D1	10A
10B	D0	38	38	D0	10B
10C	MEM.G D7	39	39	MEM.G D7	10C
10D	D6	40	40	D6	10D
11A	D5	41	41	D5	11A
11B	D4	42	42	D4	11B
111C	D3	43	43	D3	111C
11D	D2	44	44	D2	11D
12A	D1	45	45	D1	12A
12B	D0	46	46	D0	12B
12C	MEM.R D7	47	47	MEM.R D7	12C
12D	D6	48	48	D6	12D
13A	D5	49	49	D5	13A
13B	D4	50	50	D4	13B
13C	D3	51	51	D3	13C
13D	D2	52	52	D2	13D
14A	D1	53	53	D1	14A
14B	D0	54	54	D0	14B
14C	RM ON	55	55	RM ON	14C
14D	MM ON	56	56	MM ON	14D
15A	MM SEL 0	57	57	MM SEL 0	15A
15B	1	58	58	1	15B
15C	2	59	59	2	15C
15D	3	60	60	3	15D

CONNECTOR	CONNECTOR
CN-919	**CN-919**

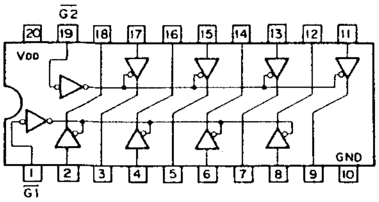
4-3. SEMICONDUCTORS

The chart in this section may sometimes show diodes, transistors, and ICs that are not interchangeable. When replacing a component, be sure to refer to the parts list. The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

TYPE	PAGE
02DZ20	212
1SS181	212
1SS226	212
1SS294	212
1SS303	212
1SS304	212
2SA1162	212
2SA1226	212
2SA1576	212
2SA1611	212
2SC1623	212
2SC2714	212
2SC4103	212
2SC4177	212
2SK852	212
2SK94	212
BG5531K	212
D2FL20	212
DTC144EK	212
DTC144EU	212
ERA83-006	212
LN45YP	212
MA152WK	212
RD3.6M-B1	212
RD5.6M-B2	212
RD6.8M-B	212
XP1401	212
XP1501	212
XP4601	212
XP6401	212
XP6501	212
74AC244SJ	184
BH9590FP-Y	184
CX23065A	184
CXA1399Q	184
CXA1439M	184
CXA1577R	185
CXD1178Q	188
CXD1217M	188
CXD1250N	189
CXD1256AR	190
CXD207-105Q	185
CXD208-101Q	186
CXD209-107Q	186
CXD209-114Q	187
CXD210-108Q	187
CXD2200G	191
CXD8301Q	192
CXP80P116Q-2-DKC-V1.00	192
CY7C128A-25VCTEL	192
CY7C291A-35PC	193
CY7C291A-35PC-A03	193
EPM5128LC	193
EPM5128LC-S12	193
HD14053BFP	194
HN58C65FP-25T	194
ICX039AT-1	194
M62352GP	195
M6M80011AFP	195
MAX238CWG	195
MB818251-70PZS	196
MB8421-90LPFQ	196
MB84256A-10LPF	196
MB86601APF	197
MB89363PF	197
MC14051BF	198
MC14052BF	198
MC14069UBF	198
MC34182M	198
MC74AC04M	198
MC74F244M	198
MC74F283M	198
MC74HC4002F	199
MC74HC4053F	199
MC74HC4066F	199
MC74HC4078F	199
NJM7805FA	199
NJM7909FA	199
RTC4553B	200
S-81250HG-RD-S	200
S16MD01	200
SC370605D	200
SC7S04F	200
SN74ALS00ANS	200
SN74ALS02NS	201
SN74ALS04BNS	201
SN74ALS08NS	201
SN74ALS10ANS	201
SN74ALS153NS	201
SN74ALS163BNS	202
SN74ALS244BNS	198
SN74ALS27NS	201
SN74ALS273NS	202
SN74ALS32NS	201
SN74ALS374ANS	202
SN74ALS74ANS	201
SN74HC00ANS	202
SN74HC02ANS	202
SN74HC04ANS	198
SN74HC08ANS	202
SN74HC125ANS	203
SN74HC138ANS	203
SN74HC139ANS	203
SN74HA14ANS	203
SN74HC157ANS	204
SN74HC163ANS	204
SN74HC164ANS	204
SN74HC165ANS	204
SN74HC193ANS	205
SN74HC244ANS	205
SN74HC245ANS	205
SN74HC251ANS	205
SN74HC27ANS	203
SN74HC32ANS	203
SN74HC374ANS	205
SN74HC4075ANS	206
SN74HC74ANS	203
TC4S66F	206
TC4S69F	200
TC4S81F	206
TC4W53F	206
TC74HC221AF	206
TC74HC4538AF	206
TL064CNS	207
TL082CPS	198
TL084CPS	207
TL431CPS	207
TL7705CPS-B	207
TL7705ACPS	207
TMP68301AF-12	208
27C512-15JL-S10V1.00	207
27C512-15JL-S11V1.00	207
TMS27C512-15JL	207
UPC2372AGK	209
UPD431000AGW-70L	209
UPD6142G-101	210
UPD6453GT-610	211
UPD75P516GF	210
UPD75P516GF-DKUZ-01	210

74AC244SJ (NS) FLAT PACKAGE

C-MOS BUS BUFFER WITH 3-STATE OUTPUTS
– TOP VIEW –


$\overline{G2}$
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VDD
GND
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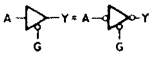
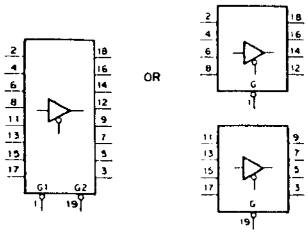
$\overline{G1}$



G	A	Y
0	0	0
0	1	1
X	X	HI-Z

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE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G1
G2
1
19
OR
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16
14
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G
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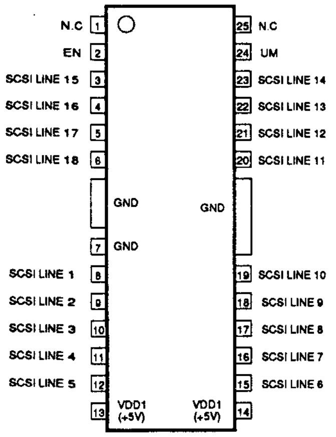
9
7
5
3
G
19

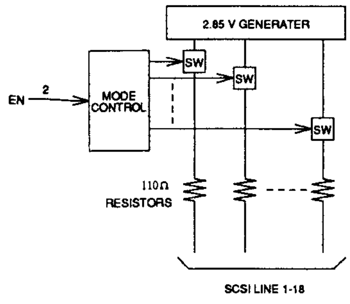
NOTE ;

TYPE	VDD
AC HC 40H	+2 to +6V
ACT HCT	+5V
74VHC	+2 to +5.5V

BH9590FP-Y

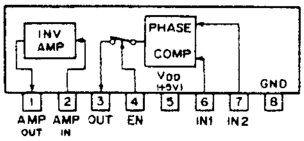
C-MOS MODE CONTROLLER(ROHM)
– TOP VIEW –


N.C 1
EN 2
SCSI LINE 15 3
SCSI LINE 16 4
SCSI LINE 17 5
SCSI LINE 18 6
GND
GND
7 GND
SCSI LINE 1 8
SCSI LINE 2 9
SCSI LINE 3 10
SCSI LINE 4 11
SCSI LINE 5 12
13
VDD1 (+5V)
VDD1 (+5V)
14
15 SCSI LINE 6
16 SCSI LINE 7
17 SCSI LINE 8
18 SCSI LINE 9
19 SCSI LINE 10
20 SCSI LINE 11
21 SCSI LINE 12
22 SCSI LINE 13
23 SCSI LINE 14
24 UM
25 N.C


2.85 V GENERATER
EN
2
MODE CONTROL
SW
SW
SW
110Ω RESISTORS
SCSI LINE 1-18

CX23065A (SONY)

N-MOS PHASE COMPARATOR WITH INVERSION AMPLIFIER
– PRINTED SIDE VIEW –


INV AMP
PHASE COMP
VDD (+5V)
GND
1
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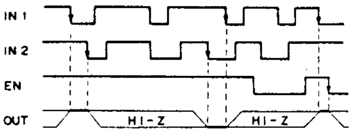
7
8
AMP OUT
AMP IN
OUT
EN
IN1
IN2

EN	OUT
1	ACTIVE
0	HIGH IMPEDANCE

1 ; HIGH LEVEL
0; LOW LEVEL

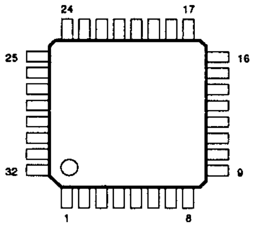
TIMING CHART



HI-Z ; HI-IMPEDANCE

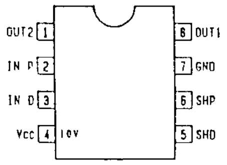
CXA1399Q (SONY)

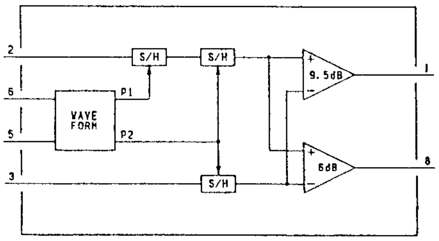
HEAD AMP (FOR DIGITAL CCD CAMERA)
– TOP VIEW –


24
17
25
16
32
9
1
8

CXA1439M (SONY) FLAT PACKAGE

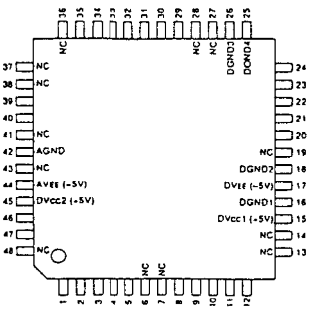
CORRELATED DOUBLE SAMPLING
– TOP VIEW –

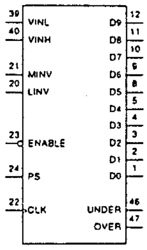

OUT2 1
IN P 2
IN D 3
Vcc 4
IOV
8 OUT1
7 GND
6 SHP
5 SHD


2
6
5
3
S/H
S/H
S/H
WAVE FORM
P1
P2
9.5dB
6dB
1
8

CXA1577R (SONY)

TTL 10-BIT 20MSPS A/D CONVERTER
– TOP VIEW –


36 35 34 33 32 31 30 29 28 27 26 25
NC
NC NC DGND3 DGND4
37 NC
38 NC
39
40
41 NC
42 AGND
43 NC
44 AVEE (–5V)
45 DVcc2 (+5V)
46
47
48 NC
24 23 22 21 20
NC 19
DGND2 18
DVEE (–5V) 17
DGND1 16
DVcc1 (+5V) 15
NC 14
NC 13
NC NC
1 2 3 4 5 6 7 8 9 10 11 12

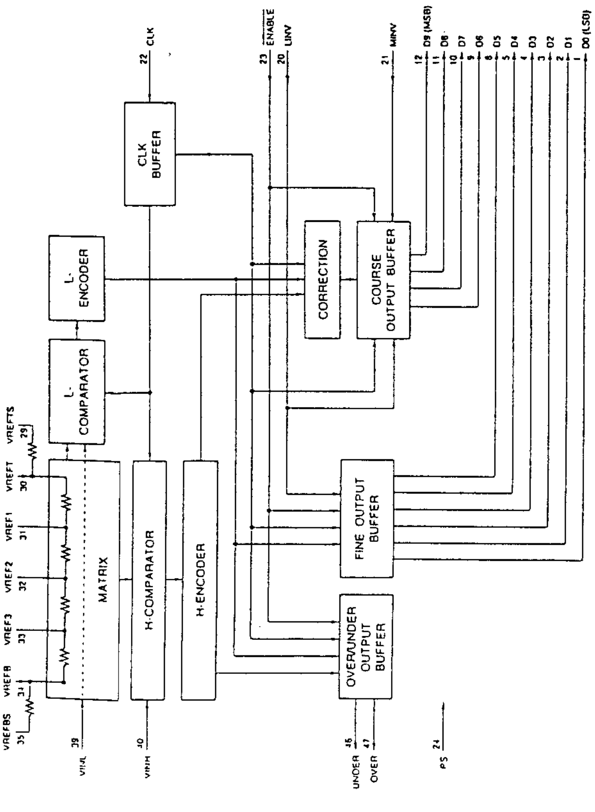

39 VINL
40 VINH
21 MINV
20 LINV
23 ENABLE
24 PS
22 CLK
D9 12
D8 11
D7 10
D6 9
D5 8
D4 5
D3 4
D2 3
D1 2
D0 1
UNDER 46
OVER 47

(DVcc1,DVcc2 = +5V
AVEE1,DVEE = –5V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	O	D0 (LSB)	13	—	NC	25	—	DGND4	37	—	NC
2	O	D1	14	—	NC	26	—	DGND3	38	—	NC
3	O	D2	15	—	DVcc1	27	—	NC	39	I	VINL
4	O	D3	16	—	DGND1	28	—	NC	40	I	VINH
5	O	D4	17	—	DVEE	29	—	VREFTS	41	—	NC
6	—	NC	18	—	DGND2	30	I	VREFT	42	—	AGND
7	—	NC	19	—	NC	31	—	VREF1	43	—	NC
8	O	D5	20	I	LINV	32	—	VREF2	44	—	AVEE
9	O	D6	21	I	MINV	33	—	VREF3	45	—	DVcc2
10	O	D7	22	I	CLK	34	I	VREFB	46	O	UNDER
11	O	D8	23	I	ENABLE	35	—	VREFBS	47	O	OVER
12	O	D9 (MSB)	24	I	PS	36	—	NC	48	—	NC

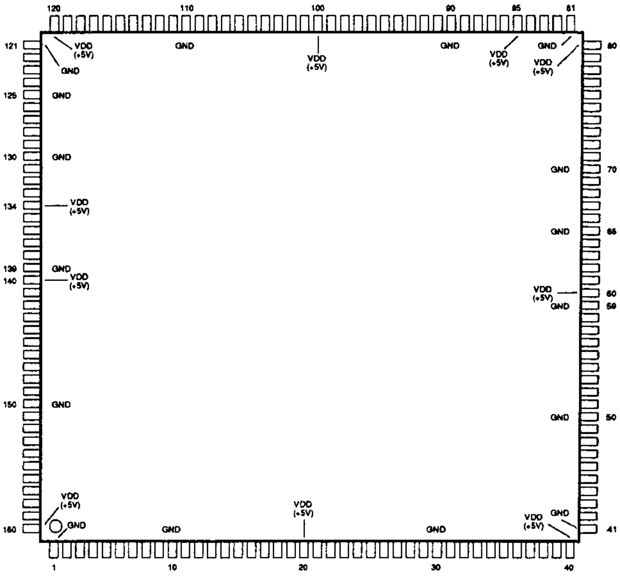
INPUT
CLK : SYSTEM CLOCK
ENABLE : 3 STAGE CONTROL (L: ENABLE)
LINV : D0 (LSB) - D8 INVERSE
MINV : D9 (MSB) INVERSE
PS : POWER SAVE (H: POWER SAVE MODE)
VINL, VINH: ANALOG

OUTPUT
D0 (LSB) - D9 (MSB): DIGITAL
UNDER : UNDER FLOW
OVER : OVER FLOW


22 CLK
23 ENABLE
20 LINV
21 MINV
12 D9 (MSB)
11 D8
10 D7
9 D6
8 D5
5 D4
4 D3
3 D2
2 D1
1 D0 (LSB)
CLK BUFFER
L-ENCODER
L-COMPARATOR
CORRECTION
COURSE OUTPUT BUFFER
VREFTS 29
VREFT 30
VREF1 31
VREF2 32
VREF3 33
VREFB 34
VREFBS 35
MATRIX
H-COMPARATOR
H-ENCODER
FINE OUTPUT BUFFER
OVER/UNDER OUTPUT BUFFER
39 VINL
40 VINH
46 UNDER
47 OVER
24 PS

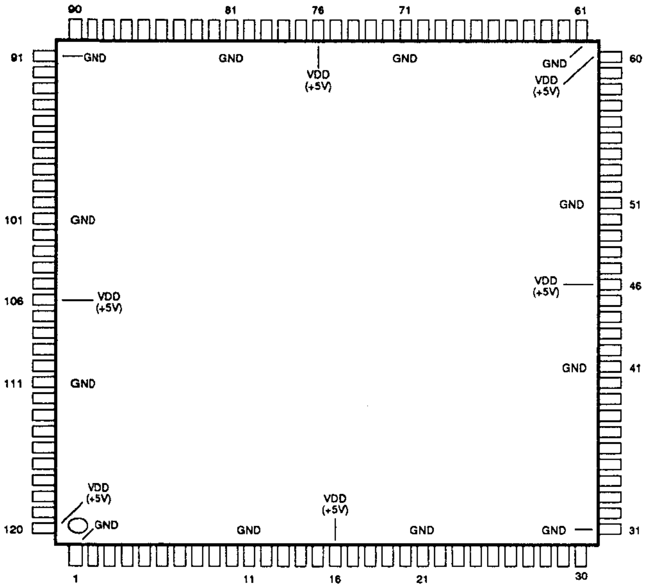
CXD207-105Q (SONY)

C-MOS GATE ARRAY
– TOP VIEW –


120 110 100 90 85 81
121 125 130 134 139 140 150 160
80 70 66 60 59 50 41
1 10 20 30 40
VDD (+5V)
GND

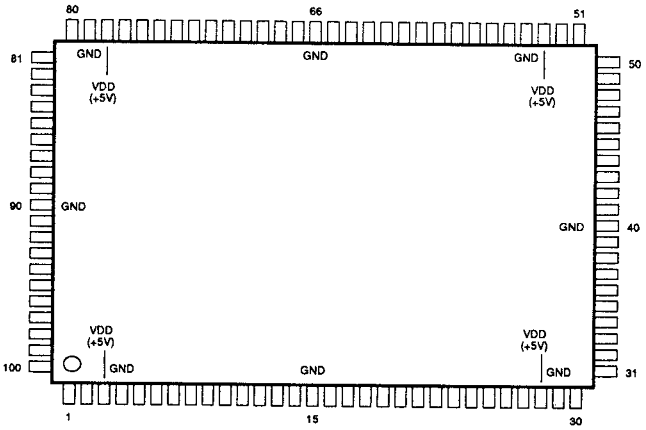
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	-	GND	41	-	GND	81	-	GND	121	-	GND
2	O	SRC	42	I/O	HVB2	82	I/O	DA1	122	I/O	MR3
3	O	SWC	43	I/O	HVB3	83	I/O	DA2	123	I/O	MR4
4	O	FRC	44	I/O	HVB4	84	I/O	DA3	124	I/O	MR5
5	O	RMC	45	I	H8	85	-	VDD(+5V)	125	-	GND
6	O	RMS0	46	I/O	HVB5	86	I/O	DA4	126	I/O	MR6
7	O	RMS1	47	I/O	HVB6	87	I/O	DA5	127	I/O	MR7
8	O	RMS2	48	I/O	HVB7	88	I/O	DA6	128	I/O	MG0
9	O	RMS3	49	I	RCK	89	I/O	DA7	129	I/O	MG1
10	-	GND	50	-	GND	90	-	GND	130	-	GND
11	O	RAMR	51	I/O	HVG0	91	I	AD0	131	I/O	MG2
12	O	RAMG	52	I/O	HVG1	92	I	AD1	132	I/O	MG3
13	O	RAMB	53	I/O	HVG2	93	I	AD2	133	I/O	MG4
14	O	SAM0	54	-	VDD(+5V)	94	I	AD3	134	-	VDD(+5V)
15	O	SAM1	55	I/O	HVG3	95	I	AD4	135	I/O	MG5
16	O	SAM2	56	I/O	HVG4	96	I	AD5	136	I/O	MG6
17	O	SAM3	57	I/O	HVG5	97	I	AD6	137	I/O	MG7
18	I/O	RQ1	58	I	SCK	98	I	AD7	138	I/O	MB0
19	I/O	AK1	59	-	GND	99	I	AD8	139	-	GND
20	-	VDD(+5V)	60	-	VDD(+5V)	100	-	VDD(+5V)	140	-	VDD(+5V)
21	I/O	RQ0	61	I/O	HVG6	101	I	AD9	141	I/O	MB1
22	I/O	AK0	62	I/O	HVG7	102	I	AD10	142	I/O	MB2
23	I/O	IB0	63	I/O	HVR0	103	I	AD11	143	I/O	MB3
24	I/O	IB1	64	I/O	HVR1	104	I	CSNC	144	O	S[illegible]
25	I/O	MW	65	-	GND	105	O	MAD0	145	I/O	MB4
26	I/O	IB2	66	I/O	HVR2	106	O	MAD1	146	I/O	MB5
27	I/O	IB3	67	I/O	HVR3	107	O	MAD2	147	I/O	MB6
28	I/O	IB4	68	I/O	HVR4	108	O	MAD3	148	I/O	MB7
29	I/O	IB5	69	I/O	HVR5	109	O	MAD4	149		S
30	-	GND	70	-	GND	110	-	GND	150	-	G
31	I/O	IB6	71	I/O	HVR6	111	O	MAD5	151	O	S
32	I/O	IB7	72	I/O	HVR7	112	O	MAD6	152	O	S
33	I/O	HVB0	73	O	WAT	113	O	MAD7	153	O	S
34	I/O	HVB1	74	I	RST	114	O	MAD8	154	O	D
35	I	TCK	75	I	MCS	115	I	TEST	155	O	W
36	I	TDI	76	I	CS	116	O	MCL	156	O	C
37	I	TENA1	77	I	RD	117	I/O	MDR0	157	O	CA
38	O	TDO	78	I	WR	118	I/O	MDR1	158	O	RA
39	-	VST	79	I/O	DA0	119	I/O	MDR2	159	O	M
40	-	VDD(+5V)	80	-	VDD(+5V)	120	-	VDD(+5V)	160	-	VDD(+5V)

CXD208-101Q (SONY)
C-MOS GATE ARRAY
— TOP VIEW —



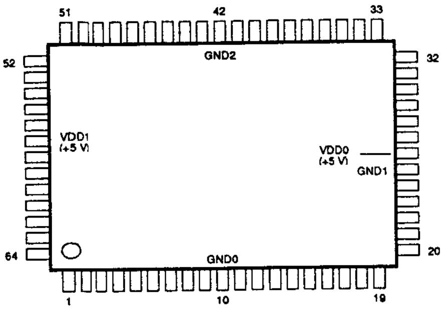
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	-	GND	31	-	GND	61	-	GND	91	-	GND
2	I/O	MD6	32	O	CCK	62	I	A2	92	I	$\overline{\text{IRDY}}$
3	I/O	MD7	33	O	CLD	63	I	A3	93	O	$\overline{\text{IREQ}}$
4	O	MA0	34	O	MD0	64	I	A4	94	O	$\overline{\text{ICS}}$
5	O	MA1	35	O	MCK	65	I	A5	95	O	$\overline{\text{IRD}}$
6	O	MA2	36	O	OUT SEL 0	66	I	A6	96	O	$\overline{\text{IWR}}$
7	O	MA3	37	O	OUT SEL 1	67	I	A7	97	O	$\overline{\text{PEND}}$
8	O	MA4	38	O	CXOP	68	I	A8	98	I	$\overline{\text{PDONE}}$
9	O	MA5	39	O	FFCLK	69	I	A9	99	I/O	$\overline{\text{REQA}}$
10	O	MA6	40	O	YUV to RGB	70	I	68000/$\overline{\text{H8}}$	100	I/O	$\overline{\text{ACKA}}$
11	-	GND	41	-	GND	71	-	GND	101		GND
12	O	MA7	42	O	RGB to YUV	72	I/O	D0	102	I/O	IDA0
13	O	MA8	43	I	TEST1	73	I/O	D1	103	I/O	IDA1
14	O	MA9	44	I/O	$\overline{\text{REQB}}$	74	I/O	D2	104	I/O	IDA2
15	O	MA10	45	I/O	$\overline{\text{ACKB}}$	75	I/O	D3	105	I/O	IDA3
16	-	VDD(+5V)	46		VDD(+5V)	76	-	VDD(+5V)	106		VDD(+5V)
17	O	MA11	47	I/O	IDB0	77	I/O	D4	107	I/O	IDA4
18	O	MA12	48	I/O	IDB1	78	I/O	D5	108	I/O	IDA5
19	O	MA13	49	I/O	IDB2	79	I/O	D6	109	I/O	IDA6
20	O	MA14	50	I/O	IDB3	80	I/O	D7	110	I/O	IDA7
21	-	GND	51	-	GND	81	-	GND	111	-	GND
22	O	MA15	52	I/O	IDB4	82	I	$\overline{\text{RD}}$	112	O	$\overline{\text{WE}}$
23	O	MA16	53	I/O	IDB5	83	I	$\overline{\text{WR}}$	113	O	$\overline{\text{OE}}$
24	O	MA17	54	I/O	IDB6	84	O	$\overline{\text{DTACK}}$ / $\overline{\text{WAIT}}$	114	I/O	MD0
25	I	TEST0	55	I/O	IDB7	85	O	$\overline{\text{INT}}$	115	I/O	MD1
26	I	TCK	56	I	$\overline{\text{MCS}}$	86	O	$\overline{\text{DREQ}}$	116	I/O	MD2
27	I	TDI	57	I	$\overline{\text{I/O CS}}$	87	I	$\overline{\text{DACK}}$	117	I/O	MD3
28	I	TENAI	58	I	A0	88	I	$\overline{\text{RESET}}$	118	I/O	MD4
29	O	TDO	59	I	A1	89	I	TEST2	119	I/O	MD5
30	I	VST(GND)	60	-	VDD(+5V)	90	I	CLOCK	120	-	VDD(+5V)

CXD209-107Q (SONY)
C-MOS GATE ARRAY
— TOP VIEW —



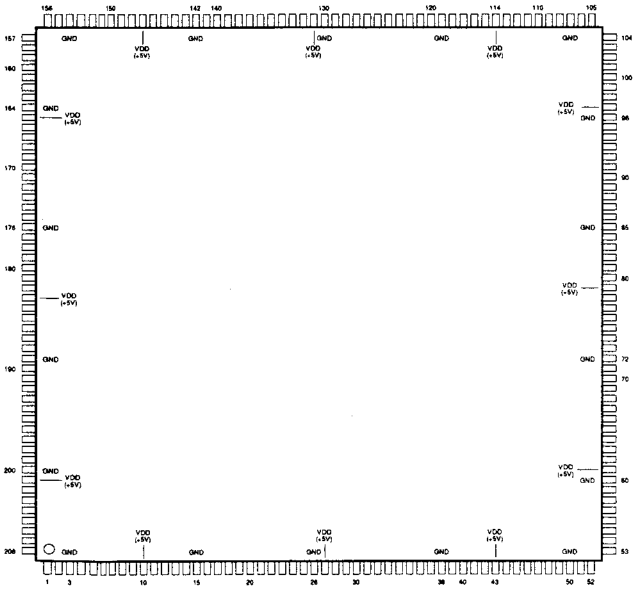
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	DA0	26		TD0	51	O	RO0	76		
2	I	DA1	27		VDT	52	O	RO1	77	I	GI0
3	-	VDD(+5V)	28	-	VDD(+5V)	53	-	VDD(+5V)	78	-	VDD(+5V)
4	-	GND	29	-	GND	54	-	GND	79	-	GND
5	I	DA2	30	I	CK	55	O	RO2	80	I	GI1
6	I	DA3	31	I	RST	56	O	RO3	81	I	GI2
7	I	DA4	32	O	BO0	57	O	RO4	82	I	GI3
8	I	DA5	33	O	BO1	58	O	RO5	83	I	GI4
9	I	AD0	34	O	BO2	59	O	RO6	84	I	GI5
10	I	AD1	35	O	BO3	60	O	RO7	85	I	GI6
11	I	AD3	36	O	BO4	61			86	I	GI7
12	I	CS	37	O	BO5	62			87	I	GI8
13	I	WR	38	O	BO6	63			88	I	GI9
14			39	O	BO7	64			89		
15	-	GND	40	-	GND	65	-	GND	90	-	GND
16	I	MX0	41			66	I	BI0	91	I	RI0
17	I	MX1	42	O	GO0	67	I	BI1	92	I	RI1
18	I	UV	43	O	GO1	68	I	BI2	93	I	RI2
19	I	EHK	44	O	GO2	69	I	BI3	94	I	RI3
20	I	P4	45	O	GO3	70	I	BI4	95	I	RI4
21			46	O	GO4	71	I	BI5	96	I	RI5
22			47	O	GO5	72	I	BI6	97	I	RI6
23		TCK	48	O	GO6	73	I	BI7	98	I	RI7
24		TDI	49	O	GO7	74	I	BI8	99	I	RI8
25		TENA1	50			75	I	BI9	100	I	RI9

CXD209-114Q (SONY)
C-MOS
— TOP VIEW —



PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I/O	AD0	17	O	TDO	33	I	A0	49	I/O	BD2
2	I/O	AD1	18		VST	34	I	A1	50	I/O	BD1
3	I/O	AD2	19	I	TEST	35	I	A2	51	I/O	BD0
4	I/O	AD3	20	I	WT	36	I	A3	52	-	N.C
5	I/O	AD4	21	I	RD	37	I	A4	53	-	N.C
6	I/O	AD5	22	I	CS	38	I	TLD	54	-	N.C
7	I/O	AD6	23	I/O	D0	39	O	BTA	55	-	N.C
8	I/O	AD7	24	I/O	D1	40	O	ATB	56	I	CLK
9	I/O	ARQ	25	-	GND	41	I/O	BAK	57	-	VDD1(+5V)
10		GND0	26	-	VDD0(+5V)	42	-	GND2	58	I	RST
11	I/O	AAK	27	I/O	D2	43	I/O	BRQ	59	-	N.C
12	-	N.C	28	I/O	D3	44	I/O	BD7	60	-	N.C
13	I	BC1	29	I/O	D4	45	I/O	BD6	61	-	N.C
14	I	TCK	30	I/O	D5	46	I/O	BD5	62	-	N.C
15	I	TDI	31	I/O	D6	47	I/O	BD4	63	-	N.C
16	I	TENA1	32	I/O	D7	48	I/O	BD3	64	-	N.C

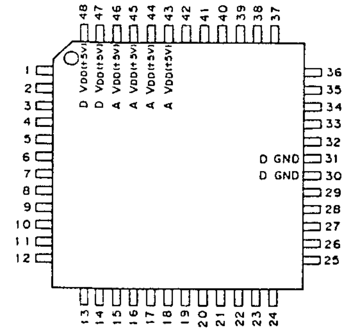
CXD210-108Q (SONY)
C-MOS GATE ARRAY
— TOP VIEW —



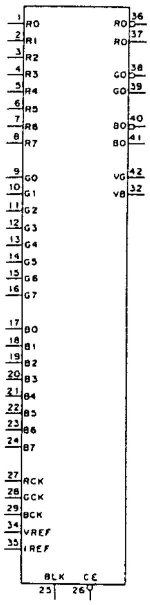
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	IRCI7	53	I/O	BO0	105	I/O	DB7	157	O	ORCO0
2			54	I/O	BO1	106		N.C	158	O	ORCO1
3	-	GND	55	I/O	BO2	107	-	GND	159	O	ORCO2
4	I	IGCI0	56	I/O	BO3	108	I	ICLK	160	O	ORCO3
5	I	IGCI1	57		N.C	109		N.C	161	O	ORCO4
6	I	IGCI2	58	I/O	BO4	110	I/O	I1REQX	162	O	ORCO5
7	I	IGCI3	59	I/O	BO5	111	I/O	I1ACKX	163	O	ORCO6
8	I	IGCI4	60	-	GND	112	I/O	RI7	164	-	GND
9	I	IGCI5	61	-	VDD(+5V)	113	I/O	RI6	165	-	VDD(+5V)
10	-	VDD(+5V)	62	I/O	BO6	114	-	VDD(+5V)	166	O	ORCO7
11	I	IGCI6	63	I/O	BO7	115	I/O	RI5	167	O	ORCO8
12	I	IGCI7	64	I/O	GO0	116	I/O	RI4	168	O	ORCO9
13	I	IBCI0	65	I/O	GO1	117	I/O	RI3	169	O	OGCO0
14	I	IBCI1	66	I/O	GO2	118	I/O	RI2	170	O	OGCO1
15	-	GND	67	I/O	GO3	119	-	GND	171	O	OGCO2
16	I	IBCI2	68	I/O	GO4	120	I/O	RI1	172	O	OGCO3
17	I	IBCI3	69	I/O	GO5	121	I/O	RI0	173	O	OGCO4
18	I	IBCI4	70	I/O	GO6	122	I/O	GI7	174	O	OGCO5
19	I	IBCI5	71	I/O	GO7	123	I/O	GI6	175	O	OGCO6
20	I	IBCI6	72	-	GND	124	I/O	GI5	176	-	GND
21	I	IBCI7	73	I/O	RO0	125	I/O	GI4	177	O	OGCO7
22		N.C	74	I/O	RO1	126	I/O	GI3	178	O	OGCO8
23		N.C	75	I/O	RO2	127	I/O	GI2	179	O	OGCO9
24		N.C	76	I/O	RO3	128	I/O	GI1	180	O	OBCO0
25		N.C	77	I/O	RO4	129	I/O	GI0	181	O	OBCO1
26	-	GND	78	I/O	RO5	130	-	GND	182	O	OBCO2
27	-	VDD(+5V)	79	-	VDD(+5V)	131	-	VDD(+5V)	183	-	VDD(+5V)
28		N.C	80	I/O	RO6	132	I/O	BI7	184	O	OBCO3
29		N.C	81	I/O	RO7	133	I/O	BI6	185	O	OBCO4
30		N.C	82	I/O	OIREQX	134	I/O	BI5	186	O	OBCO5
31		N.C	83	I/O	OIACKX	135	I/O	BI4	187	O	OBCO6
32		N.C	84		N.C	136	I/O	BI3	188	O	OBCO7
33		N.C	85	-	GND	137	I/O	BI2	189	-	GND
34		N.C	86	I	IADRS0	138	I/O	BI1	190	O	OBCO8
35		N.C	87	I	IADRS1	139	I/O	BI0	191	O	OBCO9
36		N.C	88	I	IADRS2	140		N.C	192	O	OEXH [illegible]KN
37		N.C	89	I	IADRS3	141		N.C	193	O	O4
38	-	GND	90	I	IADRS4	142	-	GND	194	O	OMX0
39		N.C	91	I	ICEX	143		N.C	195	O	OMX1
40		N.C	92	I	IREADX	144		N.C	196	O	OV
41		N.C	93	I	IWRITEX	145		N.C	197	O	OCK
42		N.C	94	O	OINTX	146		N.C	198		NC
43	-	VDD(+5V)	95	I	IRESETX	147	-	VDD(+5V)	199		NC
44		N.C	96	-	GND	148		N.C	200	-	GND
45		N.C	97	-	VDD(+5V)	149		N.C	201	-	VDD(+5V)
46		N.C	98	I/O	DB0	150		N.C	202	I	IRI0
47	I	TCK	99	I/O	DB1	151		N.C	203	I	IRI1
48	I	TDI	100	I/O	DB2	152		N.C	204	I	IRI2
49	I	TENA1	101	I/O	DB3	153		N.C	205	I	IRI3
50	-	GND	102	I/O	DB4	154	-	GND	206	I	IRI4
51	O	TDO	103	I/O	DB5	155		N.C	207	I	IRI5
52	I	VST	104	I/O	DB6	156		N.C	208	I	IRI6

CXD1178Q (SONY) FLAT PACKAGE

C-MOS 3CH 8-BIT 40MHz D/A CONVERTER
- TOP VIEW -

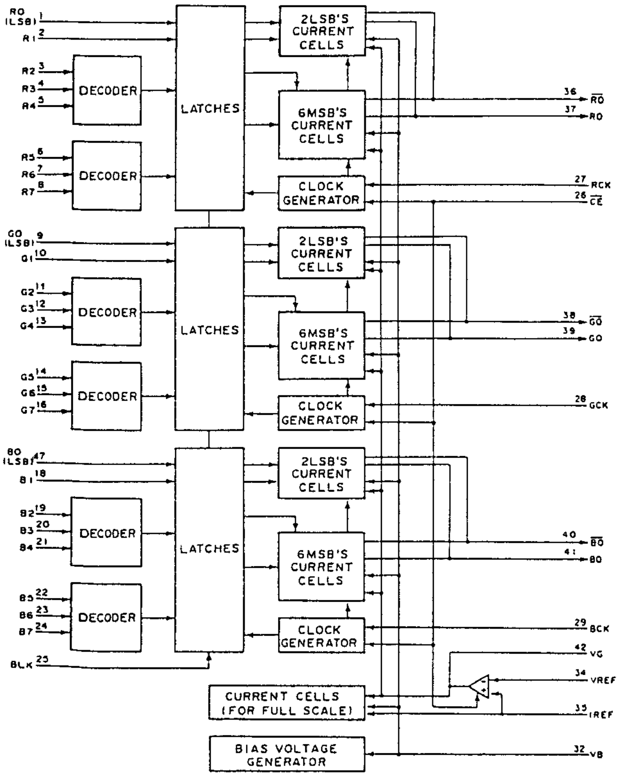


D VDD(+5V)
D VDD(+5V)
A VDD(+5V)
A VDD(+5V)
A VDD(+5V)
A VDD(+5V)
D GND
D GND



R0
R1
R2
R3
R4
R5
R6
R7
G0
G1
G2
G3
G4
G5
G6
G7
B0
B1
B2
B3
B4
B5
B6
B7
RCK
GCK
BCK
VREF
IREF
BLK
CE

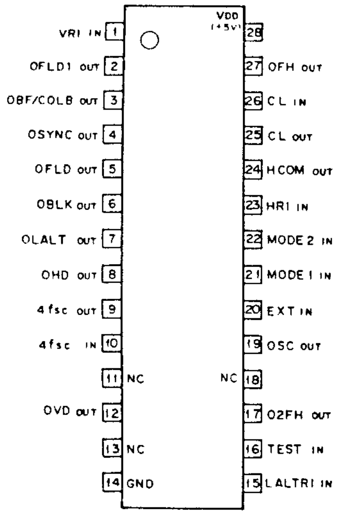
No.	I/O	SIGNAL	No.	I/O	SIGNAL	No.	I/O	SIGNAL	No.	I/O	SIGNAL
1	I	R0 (LSB)	13	I	G4	25	I	BLK	37	O	R0
2	I	R1	14	I	G5	26	I	CE	38	O	G0
3	I	R2	15	I	G6	27	I	RCK	39	O	G0
4	I	R3	16	I	G7	28	I	GCK	40	O	B0
5	I	R4	17	I	B0 (LSB)	29	I	BCK	41	O	B0
6	I	R5	18	I	B1	30	–	D GND	42	I	VG
7	I	R6	19	I	B2	31	–	D GND	43	–	A VDD
8	I	R7	20	I	B3	32	I	VB	44	–	A VDD
9	I	G0 (LSB)	21	I	B4	33	–	A GND	45	–	A VDD
10	I	G1	22	I	B5	34	I	VREF	46	–	A VDD
11	I	G2	23	I	B6	35	I	IREF	47	–	A VDD
12	I	G3	24	I	B7	36	O	R0	48	–	A VDD



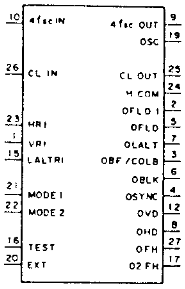
R0 (LSB)
R1
R2
R3
R4
R5
R6
R7
G0 (LSB)
G1
G2
G3
G4
G5
G6
G7
B0 (LSB)
B1
B2
B3
B4
B5
B6
B7
BLK
DECODER
LATCHES
2LSB'S CURRENT CELLS
6MSB'S CURRENT CELLS
CLOCK GENERATOR
CURRENT CELLS (FOR FULL SCALE)
BIAS VOLTAGE GENERATOR
R0
R0
RCK
CE
G0
G0
GCK
B0
B0
BCK
VG
VREF
IREF
VB

CXD1217M (SONY) FLAT PACKAGE

C-MOS SYNC GENERATOR
- TOP VIEW -



VRI IN 1
OFLD1 OUT 2
OBF/COLB OUT 3
OSYNC OUT 4
OFLD OUT 5
OBLK OUT 6
OLALT OUT 7
OHD OUT 8
4fsc OUT 9
4fsc IN 10
11 NC
OVD OUT 12
13 NC
14 GND
VDD (+5V) 28
27 OFH OUT
26 CL IN
25 CL OUT
24 HCOM OUT
23 HRI IN
22 MODE 2 IN
21 MODE 1 IN
20 EXT IN
19 OSC OUT
NC 18
17 O2FH OUT
16 TEST IN
15 LALTRI IN

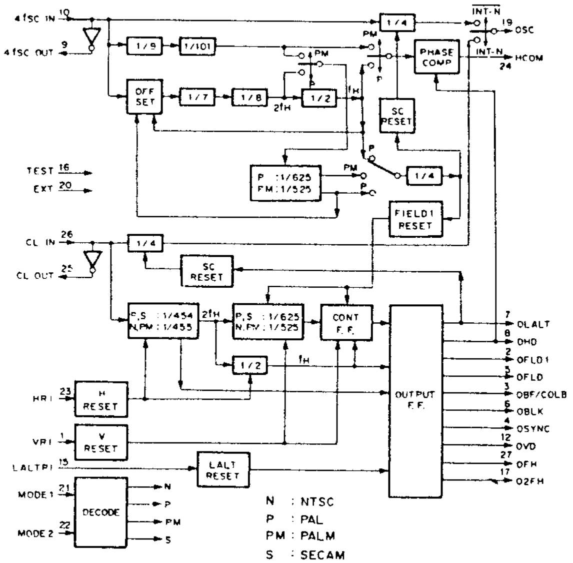


4fsc IN
CL IN
HRI
VRI
LALTRI
MODE 1
MODE 2
TEST
EXT
4fsc OUT
OSC
CL OUT
H COM
OFLD 1
OFLD
OLALT
OBF/COLB
OBLK
OSYNC
OVD
OHD
OFH
O2FH

SYSTEM	4fsc	CLOCK
NTSC	$910f_H$	$910f_H$
PAL	$1135f_H+2f_V$	$908f_H$
PALM	$909f_H$	$910f_H$
SECAM	—	$908f_H$

INPUT		SYSTEM
MODE1	MODE2	
0	0	NTSC
0	1	SECAM
1	0	PALM
1	1	PAL

0 ; LOW LEVEL
1 ; HIGH LEVEL

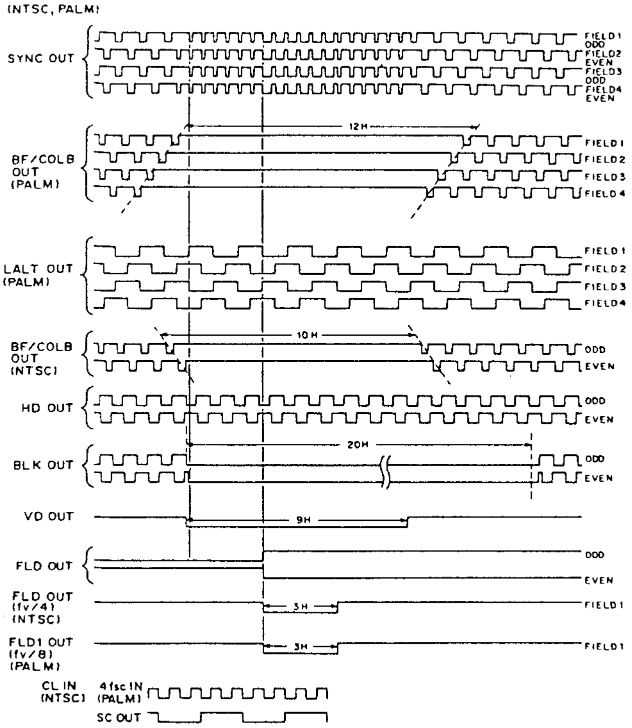


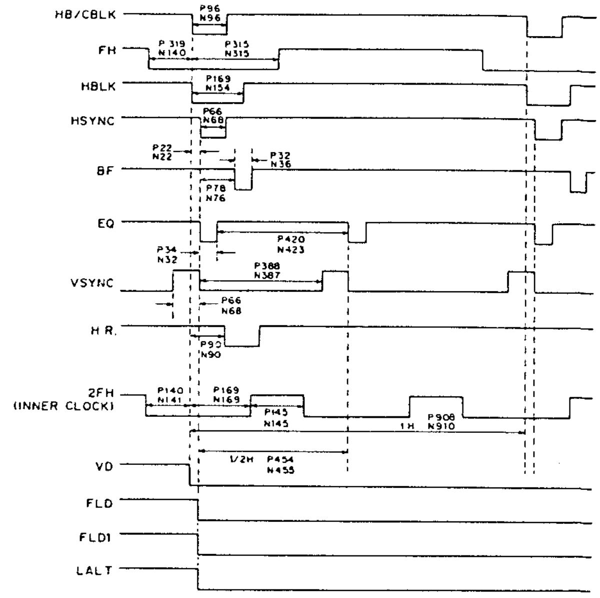
4fsc IN
4fsc OUT
1/9
1/101
1/4
PHASE COMP
INT-N
OSC
HCOM
OFF SET
1/7
1/8
1/2
2fH
fH
SC RESET
TEST
EXT
P :1/625
PM :1/525
FIELD1 RESET
CL IN
CL OUT
1/4
SC RESET
F,S :1/454
N,PM : 1/455
P,S :1/625
N,PM : 1/525
CONT F.F.
OUTPUT F.F.
HRI
H RESET
VRI
V RESET
LALTRI
LALT RESET
MODE 1
MODE 2
DECODE
N
P
PM
S
OLALT
OHD
OFLD1
OFLD
OBF/COLB
OBLK
OSYNC
OVD
OFH
O2FH
N : NTSC
P : PAL
PM : PALM
S : SECAM

INPUT
4fSC IN : 4fSC INPUT
CL IN : CLOCK INPUT
EXT : SYNC MODE SELECT
(L : INTERNAL/H : EXTERNAL)
HRI : H RESET
LALTRI : LINE CHANGE RESET
MODE 1,2 : SYSTEM SELECT
VRI : V RESET

OUT PUT
4fSC OUT : 4fSC OUTPUT
CL OUT : CLOCK OUTPUT
HCOM : PHASE COMPARATOR
O2fH : 2fH OUTPUT
OBF/COLB : BURST FLAG/COLOR BLANKING
OBLK : COMPOSITE BLANKING
OFH : H FREQUENCE
OFLD : EVEN, ODD
OFLD1 : FIELD1
OHD : H DRIVE
OLALT : LINE CHANGE
OSC : SUBCARRIER
OSYNC : COMPOSITE SYNC
OVD : V DRIVE

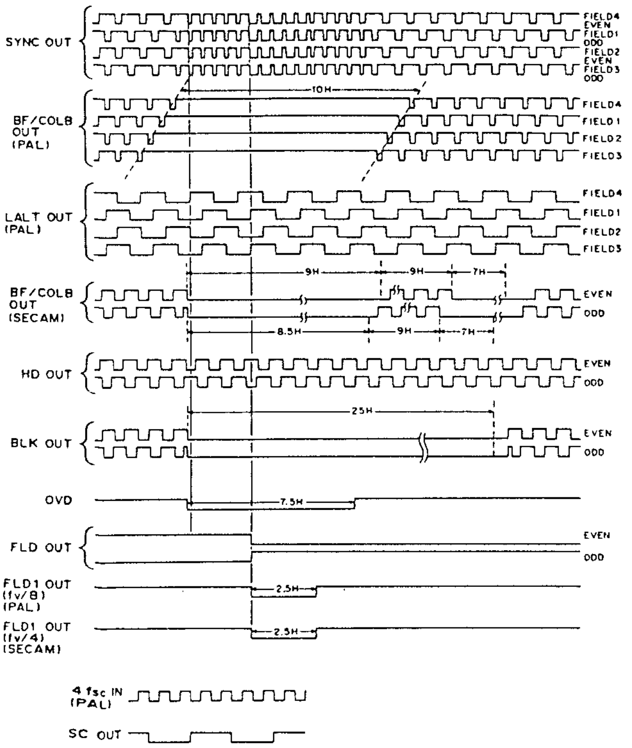
(NTSC, PALM)


SYNC OUT
FIELD1 ODD
FIELD2 EVEN
FIELD3 ODD
FIELD4 EVEN
12H
BF/COLB OUT (PALM)
FIELD1
FIELD2
FIELD3
FIELD4
LALT OUT (PALM)
10H
BF/COLB OUT (NTSC)
ODD
EVEN
HD OUT
BLK OUT
20H
VD OUT
9H
FLD OUT
FLD OUT (fv/4) (NTSC)
3H
FLD1 OUT (fv/8) (PAL M)
CL IN (NTSC)
4fsc IN (PALM)
SC OUT


HB/CBLK
P96 N96
FH
P319 N140
P315 N315
HBLK
P169 N154
HSYNC
P66 N68
BF
P22 N22
P32 N36
P78 N76
EQ
P420 N423
P34 N32
P388 N387
VSYNC
P66 N68
H R.
P90 N90
2FH (INNER CLOCK)
P140 N141
P169 N169
P145 N145
P908 N910
1H
VD
1/2H
P454 N455
FLD
FLD1
LALT

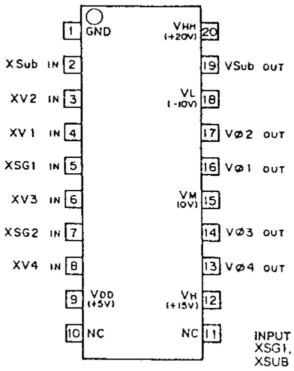
P : PAL, SECAM
N : NTSC, PALM

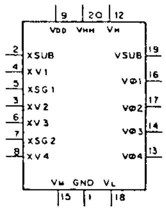
(PAL, SECAM)


SYNC OUT
FIELD4 EVEN
FIELD1 ODD
FIELD2 EVEN
FIELD3 ODD
10H
BF/COLB OUT (PAL)
FIELD4
FIELD1
FIELD2
FIELD3
LALT OUT (PAL)
9H
9H
7H
BF/COLB OUT (SECAM)
EVEN
ODD
8.5H
9H
7H
HD OUT
BLK OUT
25H
OVD
7.5H
FLD OUT
FLD1 OUT (fv/8) (PAL)
2.5H
FLD1 OUT (fv/4) (SECAM)
2.5H
4fsc IN (PAL)
SC OUT

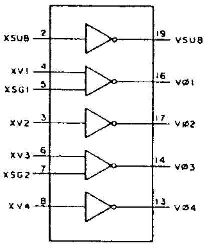
CXD1250N (SONY) FLAT PACKAGE

C-MOS VERTICAL CLOCK DRIVER FOR CCD
– TOP VIEW –


1 GND
XSub IN 2
XV2 IN 3
XV1 IN 4
XSG1 IN 5
XV3 IN 6
XSG2 IN 7
XV4 IN 8
9 VDD (+5V)
10 NC
VHH (+20V) 20
19 VSub OUT
VL (-10V) 18
17 Vø2 OUT
16 Vø1 OUT
VM (0V) 15
14 Vø3 OUT
13 Vø4 OUT
VH (+15V) 12
NC 11

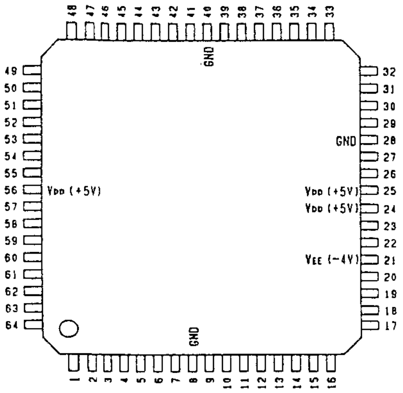

9
20
12
VDD
VHH
VH
2 XSUB
4 XV1
5 XSG1
3 XV2
6 XV3
7 XSG2
8 XV4
VSUB 19
Vø1 16
Vø2 17
Vø3 14
Vø4 13
VM
GND
VL
15
1
18

INPUT		
XSG1, XSG2	:	SENSOR GATE PULSE INPUT
XSUB	:	CCD ELECTRIC CHARGE SWEEPING AWAY PULSE INPUT
XV1-XV4	:	VERTICAL REGISTER TRANSMISSION CLOCK INPUT
OUTPUT		
VSUB	:	CCD ELECTRIC CHARGE SWEEPING AWAY PULSE OUTPUT
V ϕ 1-V ϕ 4	:	VERTICAL REGISTER TRANSMISSION CLOCK OUTPUT


XSUB 2
19 VSUB
XV1 4
XSG1 5
16 Vø1
XV2 3
17 Vø2
XV3 6
XSG2 7
14 Vø3
XV4 8
13 Vø4

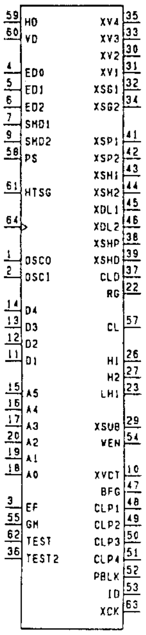
CXD1256AR (SONY) FLAT PACKAGE

TIMING GENERATOR FOR CCD CAMERA
- TOP VIEW -


48
47
46
45
44
43
42
41
40
39
38
37
36
35
34
33
GND
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
VDD (+5V)
32
31
30
29
GND 28
27
26
VDD (+5V) 25
VDD (+5V) 24
23
22
VEE (-4V) 21
20
19
18
17
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

(VDD=+5V)
(VEE=-4V)

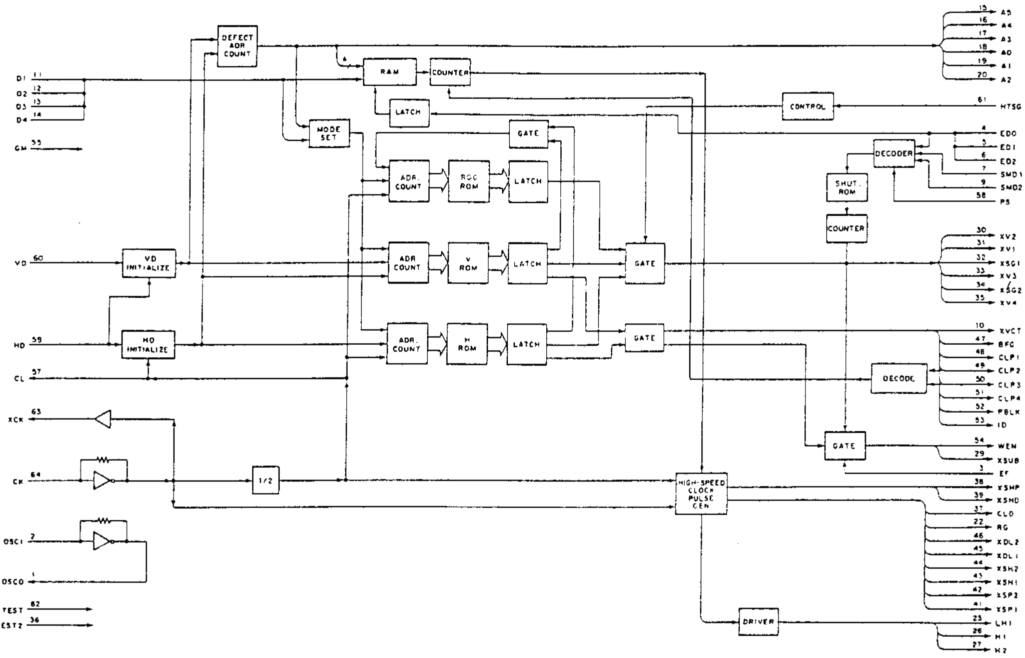
Pin No.	I/O	SYMBOL	Pin No.	I/O	SYMBOL	Pin No.	I/O	SYMBOL	Pin No.	I/O	SYMBOL
1	O	OSCO	17	O	A3	33	O	XV3	49	I/O	CLP2
2	I	OSCI	18	O	A0	34	O	XSG2	50	I/O	CLP3
3	I	EF	19	O	A1	35	O	XV4	51	O	CLP4
4	I	ED0	20	O	A2	36	I	TEST2	52	O	PBLK
5	I	ED1	21	–	VEE	37	O	CLD	53	O	ID
6	I	ED2	22	O	RG	38	O	XSHP	54	O	WEN
7	I	SMD1	23	–	LH1	39	O	XSHD	55	I	GM
8	–	GND	24	–	VDD	40	–	GND	56	–	VDD
9	I	SMD2	25	–	VDD	41	O	XSP1	57	O	CL
10	O	XVCT	26	O	H1	42	O	XSP2	58	I	PS
11	I	D1	27	O	H2	43	O	XSH1	59	I	HD
12	I	D2	28	–	GND	44	O	XSH2	60	I	VD
13	I	D3	29	O	XSUB	45	O	XDL1	61	I	HTSG
14	I	D4	30	O	XV2	46	O	XDL2	62	I	TEST
15	O	A5	31	O	XV1	47	O	BFG	63	O	XCK
16	O	A4	32	O	XSG1	48	O	CLP1	64	I	CK


59 HD
60 VD
4 ED0
5 ED1
6 ED2
7 SMD1
9 SMD2
58 PS
61 HTSG
64
1 OSCO
2 OSCI
14 D4
13 D3
12 D2
11 D1
15 A5
16 A4
17 A3
20 A2
19 A1
18 A0
3 EF
55 GM
62 TEST
36 TEST2
XV4 35
XV3 33
XV2 30
XV1 31
XSG1 32
XSG2 34
XSP1 41
XSP2 42
XSH1 43
XSH2 44
XDL1 45
XDL2 46
XSHP 38
XSHD 39
CLD 37
RG 22
CL 57
H1 26
H2 27
LH1 23
XSUB 29
WEN 54
XVCT 10
BFG 47
CLP1 48
CLP2 49
CLP3 50
CLP4 51
PBLK 52
ID 53
XCK 63

INPUT
CK : 8fsc CLOCK
D1 : WHEN EXTERNAL ROM IS USED, DATA INPUT.
WHEN NOT USED, L ; NO ERROR COMPENSATION
D2 : WHEN EXTERNAL ROM IS USED, DATA INPUT
WHEN NOT USED, L ; COLOR H ; B/W
D3 : WHEN EXTERNAL ROM IS USED, DATA INPUT.
WHEN NOT USED, FIXED TO LOW
D4 : WHEN EXTERNAL ROM IS USED, DATA INPUT.
WHEN NOT USED, L ; NTSC H ; PAL
ED0 : SHUTTER SPEED SET. WHEN SERIAL MODE, STROBE INPUT.
ED1 : SHUTTER SPEED SET. WHEN SERIAL MODE, CLOCK INPUT.
ED2 : SHUTTER SPEED SET. WHEN SERIAL MODE, DATA INPUT.
EF : DATA INPUT METHOD CHANGE FOR ERROR COMPENSATION
H ; EXTERNAL ROM USED
L ; SERIAL INPUT FROM MICROPROCESSOR
GM : L ; FOR ANALOG SIGNAL, H ; FOR DIGITAL SIGNAL
HD : HORIZONTAL DRIVE
HTSG : XSG1, XSG2 CONTROL
H ; XSG1 AND 2 GENERATED
L ; XSG1 AND 2 STOPPED
OSCI : INVERTER INPUT FOR OSCILLATION
PS : ELECTRONIC SHUTTER SPEED INPUT METHOD CHANGE
H ; PARALLEL INPUT
L ; SERIAL INPUT
SMD1, SMD2 : SHUTTER MODE SET
TEST, TEST2 : FOR TEST (NORMALLY Low)
VD : VERTICAL DRIVE

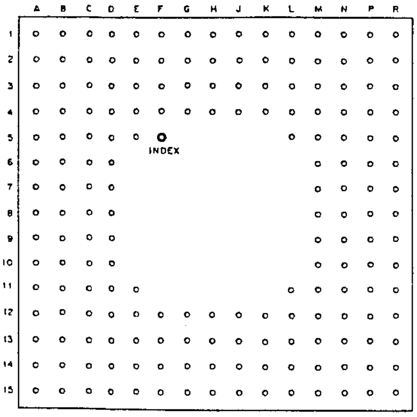
OUTPUT
A5-A0 : ADDRESS FOR EXTERNAL ROM
BFG : PULSE FOR ENCODER · CHROMA MODULATOR
WHEN GM = H, ERROR POSITION SPECIFING PULSE
CL : 4fsc CLOCK
CLD : 4fsc CLOCK
CLP1..CLP4 : PULSE FOR CLAMP
H1, H2 : CLOCK FOR CCD HORIZONTAL REGISTER DRIVE
ID : LINE IDENTIFICATION
OSCO : INVERTER OUTPUT FOR OSCILLATION
PBLK : BLANKING CLEANING PULSE
RG : RESET GATE PULSE
WEN : WRITE ENABLE (ONLY WHEN LOW SHUTTER SPEED)
XCK : 8fsc CLOCK
XDL1, XDL2 : CLOCK FOR DELAY LINE
XSG1, XSG2 : CCD SENSOR ELECTRIC CHARGE READ OUT PULSE
XSH1, XSH2 : SWITCHING SAMPLE HOLD PULSE
XSHD : PULSE FOR DATA SAMPLE HOLD
XSHP : PRE-CHARGE LEVEL SAMPLE HOLD PULSE
XSP1, XSP2 : CHROMA SEPARATION SAMPLE HOLD PULSE
XSUB : ELECTRIC CHARGE DISCHARGING PULSE
XV1-XV4 : VERTICAL SCANNING CLOCK
XVCT : POWER CONTROL FOR EXTERNAL ROM

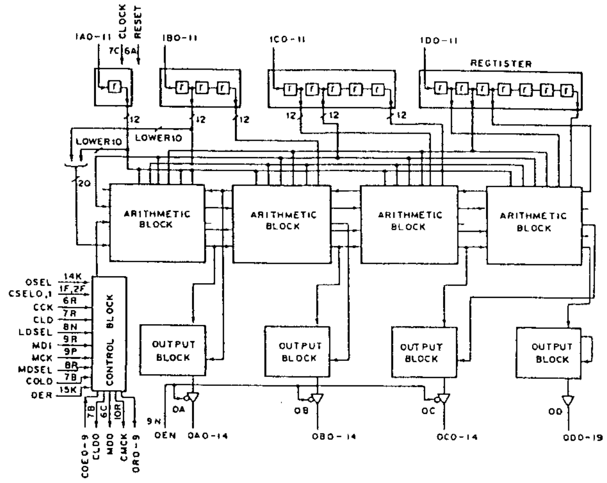
INPUT/OUTPUT
CLP2, CLP3 : PULSE FOR CLAMP. WHEN GM = H, STANDBY MODE SWITCHING INPUT

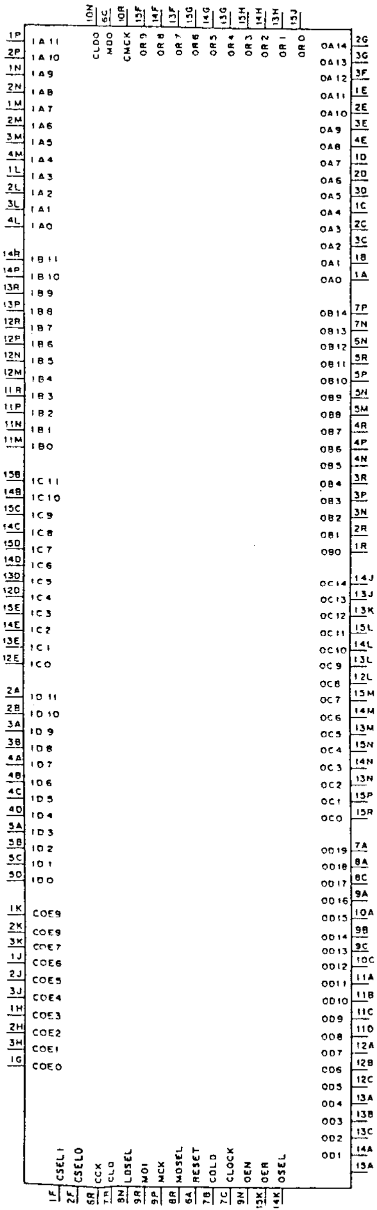

D1 11
D2 12
D3 13
D4 14
GM 55
VD 60
HD 59
CL 57
XCK 63
CK 64
OSCI 2
OSCO 1
TEST 62
TEST2 36
DEFECT ADR COUNT
RAM
COUNTER
LATCH
MODE SET
GATE
ADR. COUNT
ROC ROM
LATCH
VD INITIALIZE
ADR. COUNT
V ROM
LATCH
GATE
HD INITIALIZE
ADR. COUNT
H ROM
LATCH
GATE
1/2
HIGH-SPEED CLOCK PULSE GEN
DRIVER
CONTROL
DECODER
SHUT. ROM
COUNTER
DECODE
GATE
15 A5
16 A4
17 A3
18 A0
19 A1
20 A2
61 HTSG
4 ED0
5 ED1
6 ED2
7 SMD1
9 SMD2
58 PS
30 XV2
31 XV1
32 XSG1
33 XV3
34 XSG2
35 XV4
10 XVCT
47 BFG
48 CLP1
49 CLP2
50 CLP3
51 CLP4
52 PBLK
53 ID
54 WEN
29 XSUB
3 EF
38 XSHP
39 XSHD
37 CLD
22 RG
46 XDL2
45 XDL1
44 XSH2
43 XSH1
42 XSP2
41 XSP1
23 LH1
26 H1
27 H2

CXD2200G (SONY)

C-MOS DIGITAL VIDEO PROCESSOR
– BOTTOM VIEW –


A B C D E F G H J K L M N P R
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
INDEX


IA0-11
CLOCK
RESET
7C
6A
IB0-11
IC0-11
ID0-11
REGTISTER
12
LOWER10
20
ARITHMETIC BLOCK
OSEL 14K
CSEL0,1 1F,2F
CCK 6R
CLD 7R
LDSEL 8N
MDI 9R
MCK 9P
MDSEL 8R
COLD 7B
OER 15K
CONTROL BLOCK
OUTPUT BLOCK
OA
OB
OC
OD
9N
OEN
OA0-14
OB0-14
OC0-14
OD0-19
COE0-9
CLDO
MDO
CMCK
OR0-9


IA11 IA10 IA9 IA8 IA7 IA6 IA5 IA4 IA3 IA2 IA1 IA0
IB11 IB10 IB9 IB8 IB7 IB6 IB5 IB4 IB3 IB2 IB1 IB0
IC11 IC10 IC9 IC8 IC7 IC6 IC5 IC4 IC3 IC2 IC1 IC0
ID11 ID10 ID9 ID8 ID7 ID6 ID5 ID4 ID3 ID2 ID1 ID0
COE9 COE8 COE7 COE6 COE5 COE4 COE3 COE2 COE1 COE0
OA14 … OA0
OB14 … OB0
OC14 … OC0
OD19 … OD1
CLDO MDO CMCK OR9 OR8 OR7 OR6 OR5 OR4 OR3 OR2 OR1 OR0
CSEL1 CSEL0 CCK CLD LDSEL MDI MCK MDSEL RESET COLD CLOCK OEN OER OSEL

INPUTS
IA0 – IA11 : SIGNAL INPUTS
IB0 – IB11 : SIGNAL INPUTS
IC0 – IC11 : SIGNAL INPUTS
ID0 – ID11 : SIGNAL INPUTS
COE0 – COE9 : SIGNAL INPUTS
CSEL0, 1 : COEFFICIENT SELECT
CCK : COEFFICIENT INPUT CLOCK
CLD : COEFFICIENT LOAD PULSE INPUT
LDSEL : LOAD SELECT
MDI : MODE DATA INPUT
MCK : MODE DATA INPUT CLOCK
MDSEL : MODE DATA SELECT
RESET : INTERNAL COUNTER RESET INPUT
COLD : COUNTER LOAD CONTROL INPUT
CLOCK : SYSTEM CLOCK INPUT
OEN : OUTPUT ENABLE
OER : OR OUTPUT CONTROL
OSER : OUTPUT SELECT

OUTPUTS
CLDO : COEFFICIENT LOAD PULSE OUTPUT
MDO : MODE SIGNAL OUTPUT
CMCK : COEFFICIENT MODE CLOCK OUTPUT
OA0 – OA14 : SIGNAL OUTPUTS
OB0 – OB14 : SIGNAL OUTPUTS
OC0 – OC14 : SIGNAL OUTPUTS
OD0 – OD19 : SIGNAL OUTPUTS
OR0 – OR9 : INTERNAL COUNTER OUTPUTS

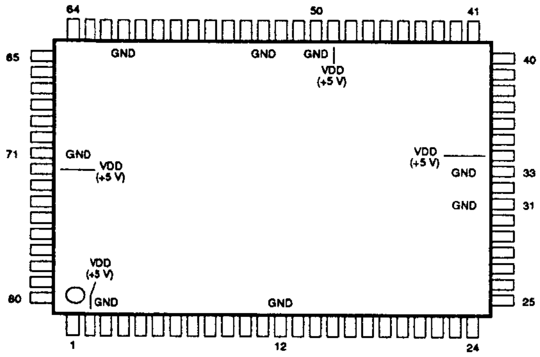
(V_{DD} = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1A	O	OA0	4A	I	ID7	8M	–	GND	13A	O	OD4
1B	O	OA1	4B	I	ID6	8N	I	LDSEL	13B	O	OD3
1C	O	OA4	4C	I	ID5	8P	–	NC	13C	O	OD2
1D	O	OA7	4D	I	ID4	8R	I	MDSEL	13D	I	IC5
1E	O	OA11	4E	O	OA8	9A	O	OD16	13E	I	IC1
1F	I	CSEL1	4F	–	GND	9B	O	OD14	13F	O	OR7
1G	I	COE0	4G	–	V_{DD}	9C	O	OD13	13G	O	OR4
1H	I	COE3	4H	–	GND	9D	–	V_{DD}	13H	O	OR1
1J	I	COE6	4J	–	V_{DD}	9M	–	V_{DD}	13J	O	OC13
1K	I	COE9	4K	–	GND	9N	I	OEN	13K	O	OC12
1L	I	IA3	4L	I	IA0	9P	I	MCK	13L	O	OC9
1M	I	IA7	4M	I	IA4	9R	I	MDI	13M	O	OC5
1N	I	IA9	4N	O	OB5	10A	O	OD15	13N	O	OC2
1P	I	IA11	4P	O	OB6	10B	–	NC	13P	I	IB8
1R	O	OB0	4R	O	OB7	10C	O	OD12	13R	I	MDSEL
2A	I	ID11	5A	I	ID3	10D	–	GND	14A	O	OD1
2B	I	ID10	5B	I	ID2	10M	–	GND	14B	I	IC10
2C	O	OA3	5C	I	ID1	10N	O	CLDO	14C	I	IC8
2D	O	OA6	5D	I	ID0	10P	–	NC	14D	I	IC6
2E	O	OA10	5E	–	V_{DD}	10R	O	CMCK	14E	I	IC2
2F	I	CSEL0	5L	–	V_{DD}	11A	O	OD11	14F	O	OR8
2G	O	OA14	5M	O	OB8	11B	O	OD10	14G	O	OR5
2H	I	COE2	5N	O	OB9	11C	O	OD9	14H	O	OR2
2J	I	COE5	5P	O	OB10	11D	O	OD8	14J	O	OC14
2K	I	COE8	5R	O	OB11	11E	–	V_{DD}	14K	O	OA8
2L	I	IA2	6A	I	RESET	11L	–	V_{DD}	14L	O	OC10
2M	I	IA6	6B	–	NC	11M	I	IB0	14M	O	OC6
2N	I	IA8	6C	O	MDO	11N	I	IB1	14N	O	OC3
2P	I	IA10	6D	–	GND	11P	I	IB2	14P	I	IB10
2R	O	OB1	6M	–	GND	11R	I	IB3	14R	I	IB11
3A	I	ID9	6N	O	OB12	12A	O	OD7	15A	O	OD0
3B	I	ID8	6P	–	NC	12B	O	OD6	15B	I	IC11
3C	O	OA2	6R	I	CCK	12C	O	OD5	15C	I	IC9
3D	O	OA5	7A	O	OD19	12D	I	IC4	15D	I	IC7
3E	O	OA9	7B	I	COLD	12E	I	IC0	15E	I	IC3
3F	O	OA12	7C	I	CLOCK	12F	–	GND	15F	O	OR9
3G	O	OA13	7D	–	V_{DD}	12G	–	V_{DD}	15G	O	OR6
3H	O	OCE1	7M	–	V_{DD}	12H	–	GND	15H	O	OR3
3J	I	COE4	7N	O	OB13	12J	–	V_{DD}	15J	O	OR0
3K	I	COE7	7P	O	OB14	12K	–	GND	15K	–	V_{DD}
3L	I	IA1	7R	I	CLK	12L	O	OC8	15L	O	OC11
3M	I	IA5	8A	O	OD18	12M	I	IB4	15M	O	OC7
3N	O	OB2	8B	–	NC	12N	I	IB5	15N	O	OC4
3P	O	OB3	8C	O	OD17	12P	I	IB6	15P	O	OC1
3R	O	OB4	8D	–	GND	12R	I	IB7	15R	O	OC0

CXD8301Q (SONY)

C-MOS GATE ARAY

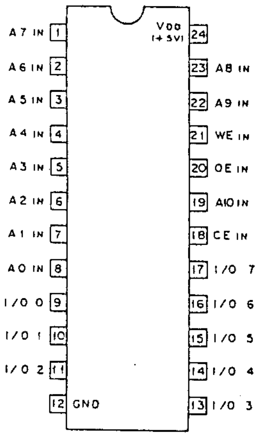
— TOP VIEW —

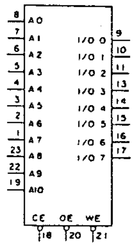

64
50
41
65
40
GND
GND
GND
VDD
(+5 V)
71
GND
VDD
(+5 V)
VDD
(+5 V)
GND
33
GND
31
VDD
(+5 V)
80
GND
GND
25
1
12
24

CY7C128A-25VCTEL (CYPRESS)

C-MOS 16K (2048x8)-BIT STATIC RAM

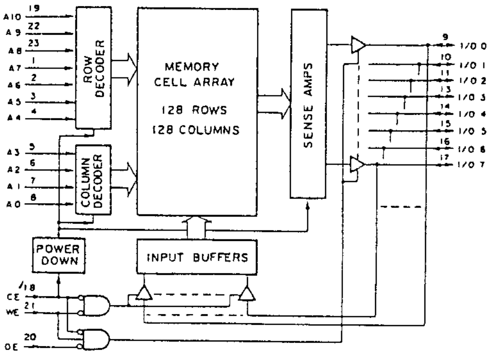
– TOP VIEW –


A7 IN 1
A6 IN 2
A5 IN 3
A4 IN 4
A3 IN 5
A2 IN 6
A1 IN 7
A0 IN 8
I/O 0 9
I/O 1 10
I/O 2 11
12 GND
VDD (+5V) 24
23 A8 IN
22 A9 IN
21 WE IN
20 OE IN
19 A10 IN
18 CE IN
17 I/O 7
16 I/O 6
15 I/O 5
14 I/O 4
13 I/O 3


8 A0
7 A1
6 A2
5 A3
4 A4
3 A5
2 A6
1 A7
23 A8
22 A9
19 A10
I/O 0 9
I/O 1 10
I/O 2 11
I/O 3 13
I/O 4 14
I/O 5 15
I/O 6 16
I/O 7 17
CE 18
OE 20
WE 21

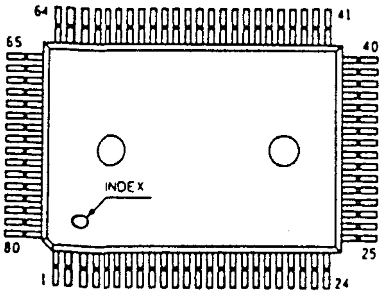
A0 – A10	: ADDRESS INPUTS
CE	: CHIP ENABLE INPUT
I/O0 – I/O7	: DATA INPUTS/OUTPUTS
OE	: OUTPUT ENABLE INPUT
WE	: WRITE ENABLE INPUT

PIN No.	SIGNAL	PIN No.	SIGNAL	PIN No.	SIGNAL	PIN No.	SIGNAL
1	COLB	21	VDD(+5V)	41	SEL2	61	GND
2	VDD(+5V)	22	GND	42	G0	62	OB0
3	GND	23	INC0	43	G1	63	OB1
4	INA0	24	INC1	44	BA	64	OB2
5	INA1	25	INC2	45	WR	65	OB3
6	INA2	26	INC3	46	CS	66	OB4
7	INA3	27	INC4	47	N.C	67	OB5
8	INA4	28	INC5	48	N.C	68	OB6
9	INA5	29	INC6	49	VDD(+5V)	69	OB7
10	INA6	30	INC7	50	GND	70	OC0
11	INA7	31	GND	51	OA0	71	GND
12	GND	32	CLK2	52	GND	72	VDD(+5V)
13	INB0	33	GND	53	OA1	73	OC1
14	INB1	34	VDD(+5V)	54	OA2	74	OC2
15	INB2	35	CLK1	55	OA3	75	OC3
16	INB3	36	A0	56	OA4	76	OC4
17	INB4	37	A1	57	OA5	77	OC5
18	INB5	38	N.C	58	OA6	78	OC6
19	INB6	39	SEL0	59	OA7	79	OC7
20	INB7	40	SEL1	60	N.C	80	COLA


A10 19
A9 22
A8 23
A7 1
A6 2
A5 3
A4 4
A3 5
A2 6
A1 7
A0 8
ROW DECODER
COLUMN DECODER
MEMORY CELL ARRAY
128 ROWS
128 COLUMNS
SENSE AMPS
POWER DOWN
INPUT BUFFERS
CE 18
WE 21
OE 20
9 I/O 0
10 I/O 1
11 I/O 2
13 I/O 3
14 I/O 4
15 I/O 5
16 I/O 6
17 I/O 7

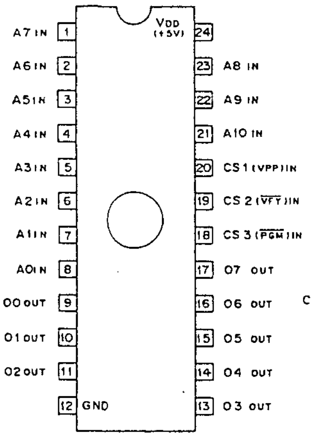
CXP80P116Q-2-DKC-V1.00 (SONY)

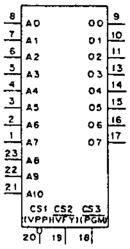
– TOP VIEW –


64
41
65
40
INDEX
80
25
1
24

CY7C291A-35PC (CYPRESS)
CY7C291A-35PC-A03 (CYPRESS)

C-MOS 16K(2048x8)-BIT EPROM
- TOP VIEW -


A7 IN 1
A6 IN 2
A5 IN 3
A4 IN 4
A3 IN 5
A2 IN 6
A1 IN 7
A0 IN 8
O0 OUT 9
O1 OUT 10
O2 OUT 11
12 GND
VDD (+5V) 24
23 A8 IN
22 A9 IN
21 A10 IN
20 CS1 (VPP) IN
19 CS2 (VFY) IN
18 CS3 (PGM) IN
17 O7 OUT
16 O6 OUT
15 O5 OUT
14 O4 OUT
13 O3 OUT

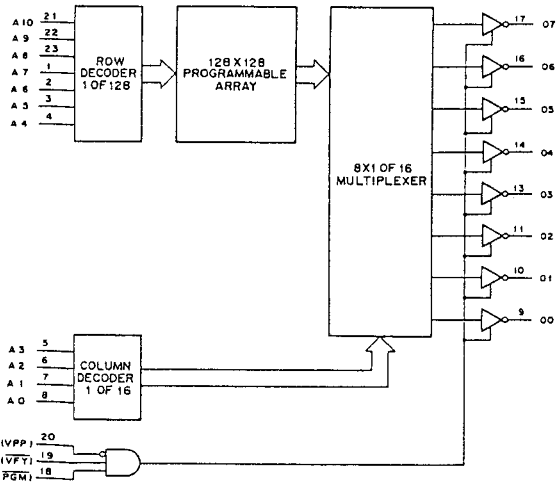

8 A0
7 A1
6 A2
5 A3
4 A4
3 A5
2 A6
1 A7
23 A8
22 A9
21 A10
O0 9
O1 10
O2 11
O3 13
O4 14
O5 15
O6 16
O7 17
CS1 (VPP) 20
CS2 (VFY) 19
CS3 (PGM) 18

A0-A10; ADDRESS INPUT
CS1-CS3; CHIP SELECT
O0-O10; DATA OUTPUT

MODE SELECTION

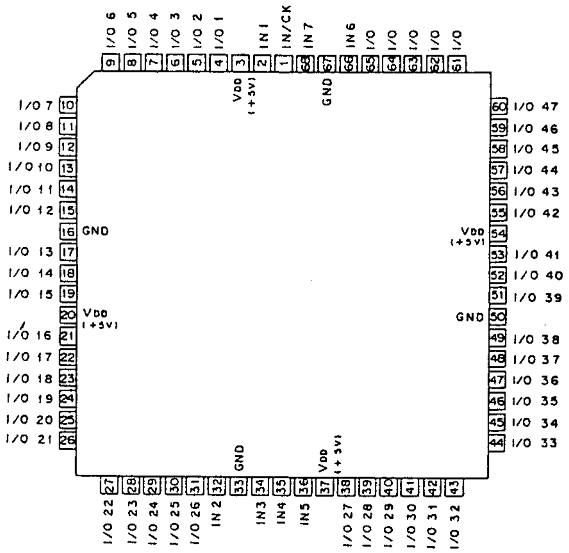
CS1	CS2	CS3	OUTPUTS	MODE
0	1	1	DATA OUT	READ
1	X	X	HI-Z	OUTPUT DISABLE
X	0	X	HI-Z	OUTPUT DISABLE
X	X	0	HI-Z	OUTPUT DISABLE
VPP	1	0	DATA IN	PROGRAM
VPP	0	1	DATA OUT	PROGRAM VERIFY
VPP	1	1	HI-Z	PROGRAM INHIBIT
VPP	1	0	DATA IN	INTELLIGENT PROGRAM
0	0	VPP	ONES	BLANK CHECK ONES
0	1	VPP	ZEROS	BLANK CHECK ZEROS

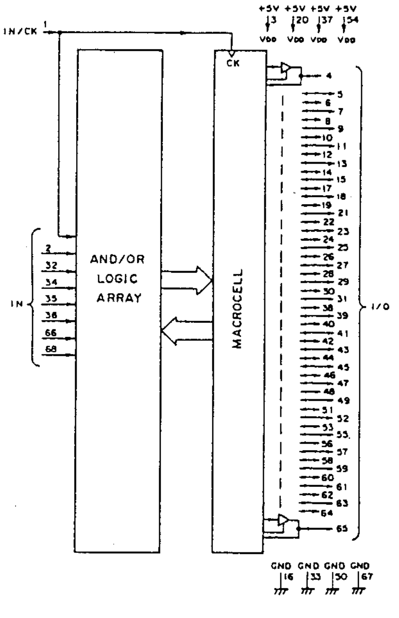
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE
(NOT TO EXCEED VDD +5%)
HI-Z; HIGH IMPEDANCE
VPP; PROGRAMING VOLTAGE
(+13V to +14V)


A10 21
A9 22
A8 23
A7 1
A6 2
A5 3
A4 4
ROW DECODER 1 OF 128
128 X 128 PROGRAMMABLE ARRAY
8X1 OF 16 MULTIPLEXER
17 O7
16 O6
15 O5
14 O4
13 O3
11 O2
10 O1
9 O0
A3 5
A2 6
A1 7
A0 8
COLUMN DECODER 1 OF 16
CS1 (VPP) 20
CS2 (VFY) 19
CS3 (PGM) 18

EPM5128LC (ALTERA)
EPM5128LC-S12 (ALTERA)

C-MOS PROGRAMMABLE LOGIC DEVICE
- TOP VIEW -

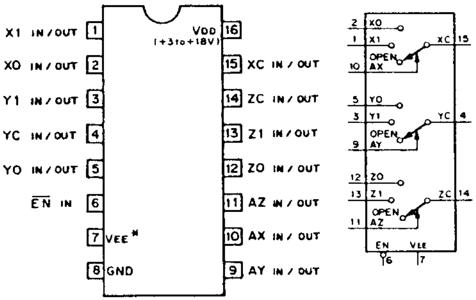

I/O 6 9
I/O 5 8
I/O 4 7
I/O 3 6
I/O 2 5
I/O 1 4
3 VDD (+5V)
IN 1 2
IN/CK 1
IN 7 68
67 GND
IN 6 66
I/O 65
I/O 64
I/O 63
I/O 62
I/O 61
I/O 7 10
I/O 8 11
I/O 9 12
I/O 10 13
I/O 11 14
I/O 12 15
16 GND
I/O 13 17
I/O 14 18
I/O 15 19
20 VDD (+5V)
I/O 16 21
I/O 17 22
I/O 18 23
I/O 19 24
I/O 20 25
I/O 21 26
60 I/O 47
59 I/O 46
58 I/O 45
57 I/O 44
56 I/O 43
55 I/O 42
VDD (+5V) 54
53 I/O 41
52 I/O 40
51 I/O 39
GND 50
49 I/O 38
48 I/O 37
47 I/O 36
46 I/O 35
45 I/O 34
44 I/O 33
27 I/O 22
28 I/O 23
29 I/O 24
30 I/O 25
31 I/O 26
32 IN 2
33 GND
34 IN3
35 IN4
36 IN5
37 VDD (+5V)
38 I/O 27
39 I/O 28
40 I/O 29
41 I/O 30
42 I/O 31
43 I/O 32


+5V +5V +5V +5V
3 20 37 54
VDD VDD VDD VDD
IN/CK 1
CK
IN
2
32
34
35
36
66
68
AND/OR LOGIC ARRAY
MACROCELL
I/O
4 5 6 7 8 9 10 11 12 13 14 15 17 18 19 21 22 23 24 25 26 27 28 29 30 31 38 39 40 41 42 43 44 45 46 47 48 49 51 52 53 55 56 57 58 59 60 61 62 63 64 65
GND GND GND GND
16 33 50 67

*ABOVE DIAGRAM SHOWS CONDITION BEFORE PROGRAMMING.

HD14053BFP (HITACHI) FLAT PACKAGE

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS
– TOP VIEW –


X1 IN/OUT 1
X0 IN/OUT 2
Y1 IN/OUT 3
YC IN/OUT 4
Y0 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+3 to +18V) 16
15 XC IN/OUT
14 ZC IN/OUT
13 Z1 IN/OUT
12 Z0 IN/OUT
11 AZ IN/OUT
10 AX IN/OUT
9 AY IN/OUT
2 X0
1 X1
XC 15
OPEN
10 AX
5 Y0
3 Y1
YC 4
OPEN
9 AY
12 Z0
13 Z1
ZC 14
OPEN
11 AZ
EN 6
VEE 7

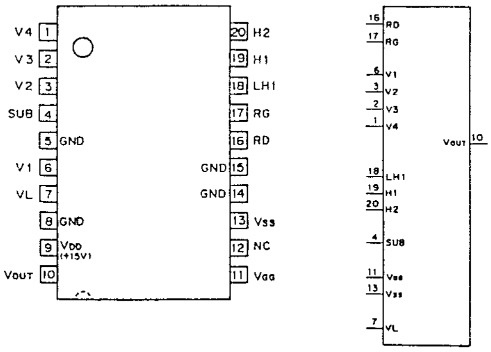
VEE*; VDD − VEE : +3 to +18 V

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

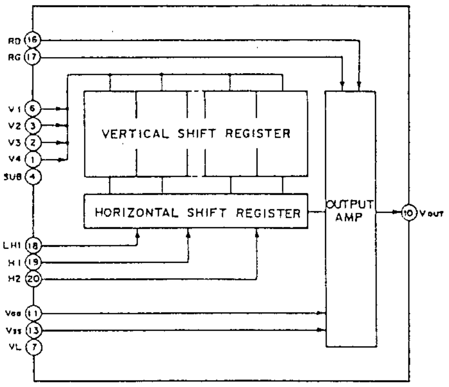
CONT. INPUTS		ON CHANNEL
EN	A (X,Y,Z,)	
0	0	0
0	1	1
1	X	OPEN

ICX039AT-1 (SONY)

1/2-INCH CCD IMAGE BLOCK
– BOTTOM VIEW –

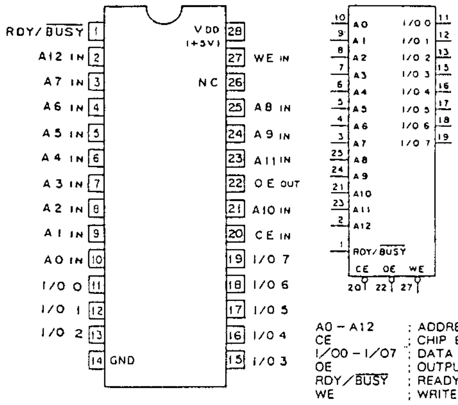

V4 1
V3 2
V2 3
SUB 4
5 GND
V1 6
VL 7
8 GND
9 VDD (+15V)
VOUT 10
20 H2
19 H1
18 LH1
17 RG
16 RD
GND 15
GND 14
13 VSS
12 NC
11 VGG
16 RD
17 RG
6 V1
3 V2
2 V3
1 V4
VOUT 10
18 LH1
19 H1
20 H2
4 SUB
11 VGG
13 VSS
7 VL

H1, H2 ; HORIZONTAL REGISTER TRANSFER CLOCK
LH1 ; HORIZONTAL REGISTER LAST STAGE TRANSFER CLOCK
RD ; RESET DRAIN BIAS
RG ; RESET GATE CLOCK
SUB ; OVERFLOW DRAIN
VGG ; OUTPUT AMP GATE BIAS
VL ; PROTECTION TRANSISTOR BIAS
VSS ; OUTPUT AMP SOURCE
V1 – V4 ; VERTICAL REGISTER TRANSFER CLOCK
VOUT ; SIGNAL OUTPUT

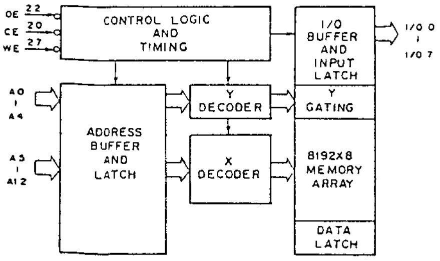

RD 16
RG 17
V1 6
V2 3
V3 2
V4 1
SUB 4
VERTICAL SHIFT REGISTER
HORIZONTAL SHIFT REGISTER
OUTPUT AMP
10 VOUT
LH1 18
H1 19
H2 20
VGG 11
VSS 13
VL 7

HN58C65FP-25T (HITACHI) FLAT PACKAGE

C-MOS 64K (8192x8)-BIT EEPROM
– TOP VIEW –


RDY/BUSY 1
A12 IN 2
A7 IN 3
A6 IN 4
A5 IN 5
A4 IN 6
A3 IN 7
A2 IN 8
A1 IN 9
A0 IN 10
I/O 0 11
I/O 1 12
I/O 2 13
14 GND
VDD (+5V) 28
27 WE IN
NC 26
25 A8 IN
24 A9 IN
23 A11 IN
22 OE OUT
21 A10 IN
20 CE IN
19 I/O 7
18 I/O 6
17 I/O 5
16 I/O 4
15 I/O 3
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
RDY/BUSY
I/O 0
I/O 1
I/O 2
I/O 3
I/O 4
I/O 5
I/O 6
I/O 7
CE OE WE

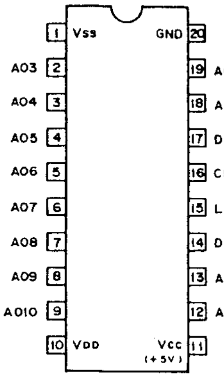
A0 – A12 ; ADDRESS INPUTS
CE ; CHIP ENABLE INPUT
I/O0 – I/O7 ; DATA INPUTS/OUTPUTS
OE ; OUTPUT ENABLE
RDY/BUSY ; READY/BUSY OUTPUT
WE ; WRITE ENABLE INPUT


OE 22
CE 20
WE 27
CONTROL LOGIC AND TIMING
I/O BUFFER AND INPUT LATCH
I/O 0
I/O 7
A0
A4
A5
A12
ADDRESS BUFFER AND LATCH
Y DECODER
Y GATING
X DECODER
8192x8 MEMORY ARRAY
DATA LATCH

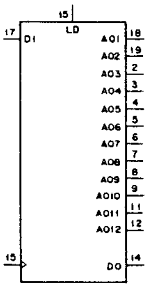
CE	OE	WE	RDY/BUSY	I/O TERMINAL	FUNCTION
0	0	1	HI-Z	DOUT	READ
1	X	X	HI-Z	HI-Z	STANDBY
0	1	0	HI-Z→LOW	DIN	WRITE
0	1	1	HI-Z	HI-Z	DESELECT
X	X	1	HI-Z	–	WRITE INH
X	0	X	HI-Z	–	WRITE INH
0	0	1	LOW	DATA OUT (I/O7)	DATA POLLING

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE
HI-Z : HIGH IMPEDANCE

M62532GP (MITSUBISHI) FLAT PACKAGE
C-MOS 12-CHANNEL 8-BIT D/A CONVERTER
(WITH BUFFER OPERATIONAL AMPLIFIER)
— TOP VIEW —



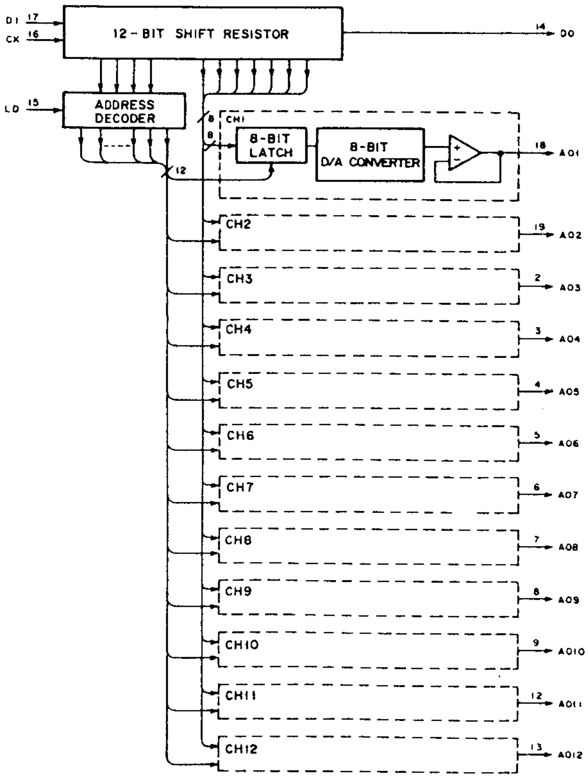
1 Vss
2 AO3
3 AO4
4 AO5
5 AO6
6 AO7
7 AO8
8 AO9
9 AO10
10 VDD
11 Vcc (+5V)
12 AO11
13 AO12
14 DO
15 LD
16 CK
17 DI
18 AO1
19 AO2
20 GND



15 LD
17 DI
AO1 18
AO2 19
AO3 2
AO4 3
AO5 4
AO6 5
AO7 6
AO8 7
AO9 8
AO10 9
AO11 11
AO12 12
15
DO 14

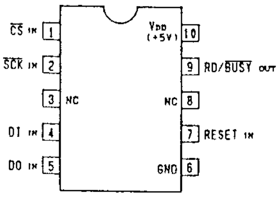
AO1 – AO12 : 8-BIT D/A OUTPUT
CK : CLOCK INPUT
DI : SERIAL DATA INPUT
DO : DATA OUTPUT

NOTE :
$3.5V < V_{DD} < V_{CC}$
$-3.5V < V_{SS} < V_{CC}$

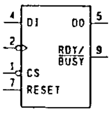


DI 17
CK 16
12-BIT SHIFT RESISTOR
14 DO
LD 15
ADDRESS DECODER
12
8
8
CH1
8-BIT LATCH
8-BIT D/A CONVERTER
18 AO1
CH2
19 AO2
CH3
2 AO3
CH4
3 AO4
CH5
4 AO5
CH6
5 AO6
CH7
6 AO7
CH8
7 AO8
CH9
8 AO9
CH10
9 AO10
CH11
12 AO11
CH12
13 AO12

M6M80011AFP (MITSUBISHI) FLAT PACKAGE
C-MOS 1k (64×16) BIT ERASABLE PROM
– TOP VIEW –

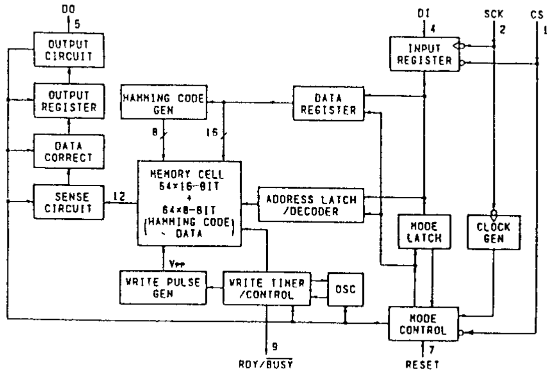


CS IN 1
SCK IN 2
3 NC
DI IN 4
DO IN 5
GND 6
7 RESET IN
NC 8
9 RD/BUSY OUT
VDD (+5V) 10



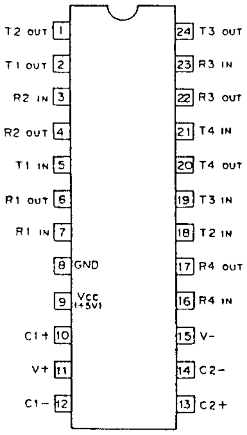
4 DI
DO 5
2
RDY/BUSY 9
1 CS
7 RESET

CS : CHIP SELECT INPUT
DI : DATA INPUT
DO : DATA OUTPUT
RDY/$\overline{\text{BUSY}}$: BUSY OUTPUT
RESET : RESET INPUT
SCK : CLOCK INPUT

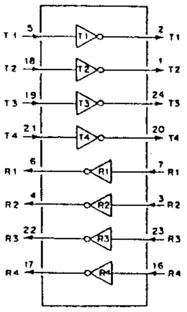


DO
5
OUTPUT CIRCUIT
OUTPUT REGISTER
DATA CORRECT
SENSE CIRCUIT
12
HAMMING CODE GEN
8
16
MEMORY CELL 64×16-BIT + 64×8-BIT (HAMMING CODE · DATA)
Vpp
WRITE PULSE GEN
WRITE TIMER /CONTROL
OSC
DATA REGISTER
ADDRESS LATCH /DECODER
DI
4
SCK
2
CS
1
INPUT REGISTER
MODE LATCH
CLOCK GEN
MODE CONTROL
9
RDY/BUSY
7
RESET

MAX238CWG (MAXIM) FLAT PACKAGE
+5V POWER RS-232 DRIVERS/RECEIVERS
– TOP VIEW –



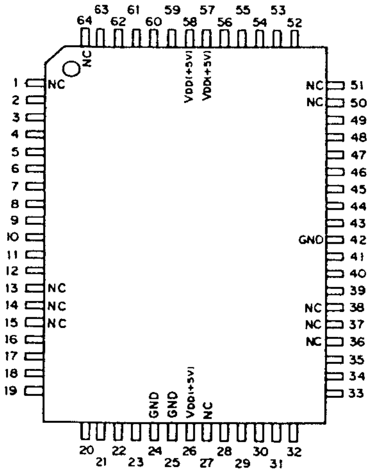
T2 OUT 1
T1 OUT 2
R2 IN 3
R2 OUT 4
T1 IN 5
R1 OUT 6
R1 IN 7
8 GND
9 Vcc (+5V)
C1+ 10
V+ 11
C1– 12
13 C2+
14 C2–
15 V–
16 R4 IN
17 R4 OUT
18 T2 IN
19 T3 IN
20 T4 OUT
21 T4 IN
22 R3 OUT
23 R3 IN
24 T3 OUT



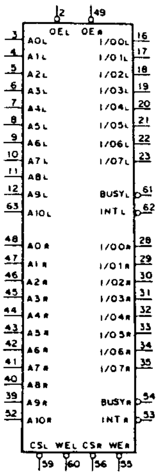
T1 5
T1
2 T1
T2 18
T2
1 T2
T3 19
T3
24 T3
T4 21
T4
20 T4
R1 6
R1
7 R1
R2 4
R2
3 R2
R3 22
R3
23 R3
R4 17
R4
16 R4

MB8421-90LPFQ (FUJITSU) (ACCESS TIME = 90nS) FLAT PACKAGE

C-MOS 16384 (2Kx8) BIT DUAL PORT STATIC RAM
– TOP VIEW –

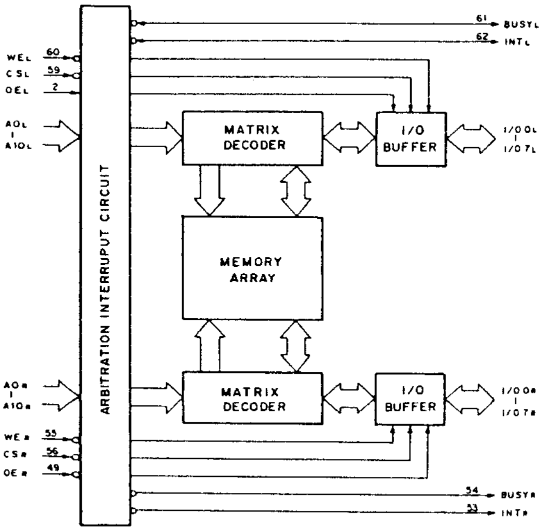


NC
VDD(+5V)
VDD(+5V)
NC
NC
GND
NC
NC
NC
NC
NC
NC
GND
GND
VDD(+5V)
NC
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51
52 53 54 55 56 57 58 59 60 61 62 63 64



OEL OER
A0L A1L A2L A3L A4L A5L A6L A7L A8L A9L A10L
I/O0L I/O1L I/O2L I/O3L I/O4L I/O5L I/O6L I/O7L
BUSYL INTL
A0R A1R A2R A3R A4R A5R A6R A7R A8R A9R A10R
I/O0R I/O1R I/O2R I/O3R I/O4R I/O5R I/O6R I/O7R
BUSYR INTR
CSL WEL CSR WER
2 49 3 4 5 6 7 8 9 10 11 12 63 16 17 18 19 20 21 22 23 61 62
48 47 46 45 44 43 42 41 40 39 52 28 29 30 31 32 33 34 35 54 53
59 60 56 55

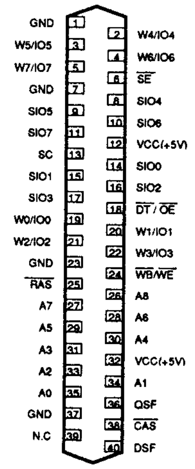
A0L – A10L, A0R – A10R : ADDRESS INPUTS
I/O0L – I/O7L, I/O0R – I/O7R : DATA INPUTS/OUTPUTS
CSL, CSR : CHIP SELECT INPUT
WEL, WER : WRITE ENABLE INPUT
OEL, OER : OUTPUT ENABLE INPUT
BUSYL, BUSYR : BUSY OUTPUT
INTL, INTR : INTERRUPT OUTPUT



ARBITRATION INTERRUPUT CIRCUIT
WEL 60
CSL 59
OEL 2
A0L
A10L
MATRIX DECODER
I/O BUFFER
I/O0L
I/O7L
MEMORY ARRAY
A0R
A10R
MATRIX DECODER
I/O BUFFER
I/O0R
I/O7R
WER 55
CSR 56
OER 49
61 BUSYL
62 INTL
54 BUSYR
53 INTR

MB818251 (FUJITSU)

DYNAMIC RAM
– TOP VIEW –

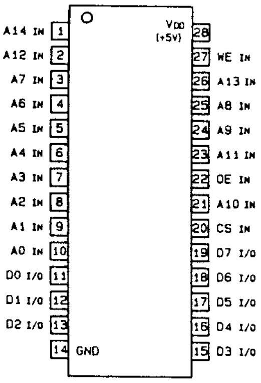


GND 1
W5/IO5 3
W7/IO7 5
GND 7
SIO5 9
SIO7 11
SC 13
SIO1 15
SIO3 17
W0/IO0 19
W2/IO2 21
GND 23
RAS 25
A7 27
A5 29
A3 31
A2 33
A0 35
GND 37
N.C 39
2 W4/IO4
4 W6/IO6
6 SE
8 SIO4
10 SIO6
12 VCC(+5V)
14 SIO0
16 SIO2
18 DT/OE
20 W1/IO1
22 W3/IO3
24 WB/WE
26 A8
28 A6
30 A4
32 VCC(+5V)
34 A1
36 QSF
38 CAS
40 DSF

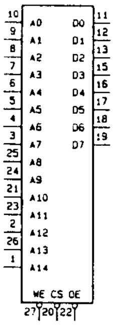
A0-A8 : ADDRESS INPUT
RAS : ROW ADDRESS STROVE
CAS : COLUMN ADDRESS STROVE
SC : SERIAL ACCESS STROVE
DT/OE : DATA TRANSFER / OUTPUT ENABLE
W0/IO0-W7/IO7 : WRITE PAR BIT / RANDOM DATA INPUT
DSF : SPECIAL FUNCTION
SE : SERIAL PORT ENABLE
SIO0-SIO7 : SERIAL DATA INPUT
QSF : SPECIAL FLAG

MB84256A-10LPF (FUJITSU) FLAT PACKAGE

C-MOS 256K (32768x8)-BIT STATIC RAM
– TOP VIEW –



A14 IN 1
A12 IN 2
A7 IN 3
A6 IN 4
A5 IN 5
A4 IN 6
A3 IN 7
A2 IN 8
A1 IN 9
A0 IN 10
D0 I/O 11
D1 I/O 12
D2 I/O 13
14 GND
VDD (+5V) 28
27 WE IN
26 A13 IN
25 A8 IN
24 A9 IN
23 A11 IN
22 OE IN
21 A10 IN
20 CS IN
19 D7 I/O
18 D6 I/O
17 D5 I/O
16 D4 I/O
15 D3 I/O

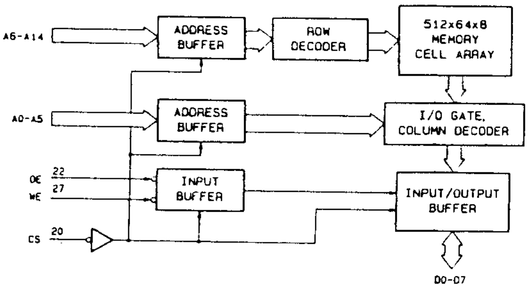


A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14
10 9 8 7 6 5 4 3 25 24 21 23 2 26 1
D0 D1 D2 D3 D4 D5 D6 D7
11 12 13 15 16 17 18 19
WE CS OE
27 20 22

A0–A14: ADDRESS INPUTS
D0–D7: DATA INPUTS/OUTPUTS
CS: CHIP SELECT INPUT
OE: OUTPUT ENABLE INPUT
WE: WRITE ENABLE INPUT

CS	OE	WE	OUTPUTS	FUNCTION
1	X	X	HI-Z	NO SELECTION
0	1	1	HI-Z	OUTPUT DISABLE
0	0	1	D OUT	READ
0	X	0	D IN	WRITE

0: LOW LEVEL
1: HIGH LEVEL
X: DON'T CARE
HI-Z: HIGH IMPEDANCE

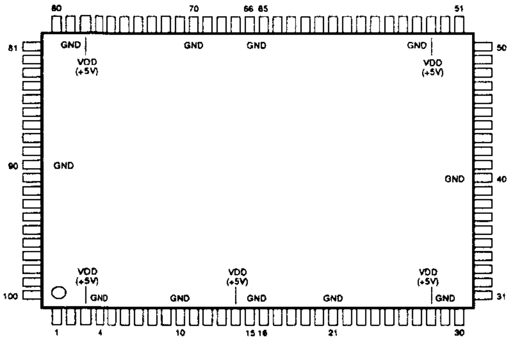


A6–A14
ADDRESS BUFFER
ROW DECODER
512x64x8 MEMORY CELL ARRAY
A0–A5
ADDRESS BUFFER
I/O GATE, COLUMN DECODER
OE 22
WE 27
INPUT BUFFER
INPUT/OUTPUT BUFFER
CS 20
D0–D7

MB86601APF (FUJITSU)

C-MOS GATE ARRAY

— TOP VIEW —

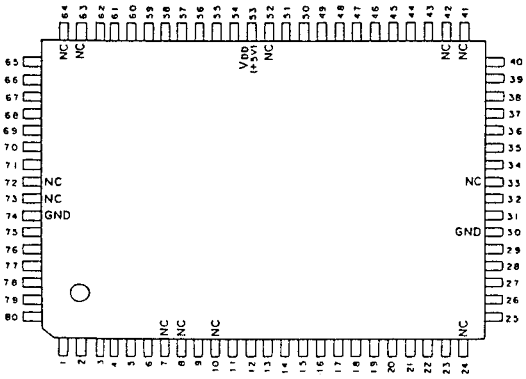

80
70
66 65
51
81
50
90
40
100
31
1
4
10
15 16
21
30
GND
VDD (+5V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	$\overline{\text{WR}}$	26	I	$\overline{\text{IOWR}}$	51	I	$\overline{\text{DACK}}$	76	I	A4
2	I	$\overline{\text{RD}}$	27	I	$\overline{\text{IORD}}$	52	O	DREQ	77	I	$\overline{\text{CS0}}$
3	-	VDD	28	-	VDD	53	-	VDD	78	-	VDD
4	-	GND	29	-	GND	54	-	GND	79	-	GND
5		CLK	30	I	DMA0	55	I	TP	80	I	$\overline{\text{CS1}}$
6		$\overline{\text{RESET}}$	31	I/O	LDMDP	56	-	(OPEN)	81	I/O	LDP
7	O	INT	32	I/O	DMD0	57		TEST2	82	I/O	D0
8	I	MODE	33	I/O	DMD1	58		$\overline{\text{I/O}}$	83	I/O	D1
9	I/O	$\overline{\text{DBP}}$	34	I/O	DMD2	59	-	GND	84	I/O	D2
10	-	GND	35	I/O	DMD3	60	I/O	$\overline{\text{REQ}}$	85	I/O	D3
11	I/O	$\overline{\text{DB7}}$	36	I/O	DMD4	61	I/O	$\overline{\text{C/D}}$	86	I/O	D4
12	I/O	$\overline{\text{DB6}}$	37	I/O	DMD5	62		$\overline{\text{SEL}}$	87	I/O	D5
13	I/O	$\overline{\text{DB5}}$	38	I/O	DMD6	63	I/O	$\overline{\text{MSG}}$	88	I/O	D6
14	-	VDD	39	I/O	DMD7	64	-	VDD	89	I/O	D7
15	-	GND	40	-	GND	65	-	GND	90	-	GND
16	-	GND	41	I/O	DMD8	66	-	GND	91	I/O	D8
17	I/O	$\overline{\text{DB4}}$	42	I/O	DMD9	67		$\overline{\text{RST}}$	92	I/O	D9
18	I/O	$\overline{\text{DB3}}$	43	I/O	DMD10	68	I/O	$\overline{\text{ACK}}$	93	I/O	D10
19	I/O	$\overline{\text{DB2}}$	44	I/O	DMD11	69		$\overline{\text{BSY}}$	94	I/O	D11
20	I/O	$\overline{\text{DB1}}$	45	I/O	DMD12	70	-	GND	95	I/O	D12
21	-	GND	46	I/O	DMD13	71	I/O	$\overline{\text{ATN}}$	96	I/O	D13
22	I/O	$\overline{\text{DB0}}$	47	I/O	DMD14	72	I	A0	97	I/O	D14
23		TEST1	48	I/O	DMD15	73	I	A1	98	I/O	D15
24	-	(NC)	49	I/O	UDMDP	74	I	A2	99	I/O	UDP
25	-	(OPEN)	50	I	$\overline{\text{DMBHE}}$	75	I	A3	100	I	BHE

MB89363PF (FUJITSU) FLAT PACKAGE

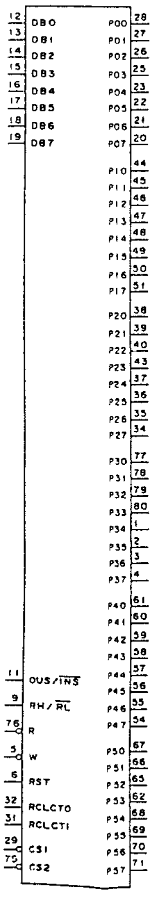
C-MOS PARALLEL DATA I/O INTERFACE

- TOP VIEW -


64
41
65
40
80
25
1
24
NC
VDD (+5V)
GND

(VDD = +5V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I/O	P34	21	I/O	P06	41	–	NC	61	I/O	P40
2	I/O	P35	22	I/O	P05	42	–	NC	62	I/O	P53
3	I/O	P36	23	I/O	P04	43	I/O	P23	63	–	NC
4	I/O	P37	24	–	NC	44	I/O	P10	64	–	NC
5	I	W	25	I/O	P03	45	I/O	P11	65	I/O	P52
6	I	RST	26	I/O	P02	46	I/O	P12	66	I/O	P51
7	–	NC	27	I/O	P01	47	I/O	P13	67	I/O	P50
8	–	NC	28	I/O	P00	48	I/O	P14	68	I/O	P54
9	I	RH/$\overline{\text{RL}}$	29	I	CS1	49	I/O	P15	69	I/O	P55
10	–	NC	30	–	GND	50	I/O	P16	70	I/O	P56
11	I	OUS/$\overline{\text{INS}}$	31	I	RSLCT1	51	I/O	P17	71	I/O	P57
12	I/O	DB0	32	I	RSLCT0	52	–	NC	72	–	NC
13	I/O	DB1	33	–	NC	53	–	VDD	73	–	NC
14	I/O	DB2	34	I/O	P27	54	I/O	P47	74	–	GND
15	I/O	DB3	35	I/O	P26	55	I/O	P46	75	I	CS2
16	I/O	DB4	36	I/O	P25	56	I/O	P45	76	I	R
17	I/O	DB5	37	I/O	P24	57	I/O	P44	77	I/O	P30
18	I/O	DB6	38	I/O	P20	58	I/O	P43	78	I/O	P31
19	I/O	DB7	39	I/O	P21	59	I/O	P42	79	I/O	P32
20	I/O	P07	40	I/O	P22	60	I/O	P41	80	I/O	P33


12 DB0
13 DB1
14 DB2
15 DB3
16 DB4
17 DB5
18 DB6
19 DB7
P00 28
P01 27
P02 26
P03 25
P04 23
P05 22
P06 21
P07 20
P10 44
P11 45
P12 46
P13 47
P14 48
P15 49
P16 50
P17 51
P20 38
P21 39
P22 40
P23 43
P24 37
P25 36
P26 35
P27 34
P30 77
P31 78
P32 79
P33 80
P34 1
P35 2
P36 3
P37 4
P40 61
P41 60
P42 59
P43 58
P44 57
P45 56
P46 55
P47 54
P50 67
P51 66
P52 65
P53 62
P54 68
P55 69
P56 70
P57 71
11 OUS/INS
9 RH/RL
76 R
5 W
6 RST
32 RCLCT0
31 RCLCT1
29 CS1
75 CS2

INPUT
CS1, CS2 ; CHIP SELECT
OUS/$\overline{\text{INS}}$; PORT 0, 3 READ SELECT
R ; READ
RCLCT0, RCLCT1 ; OBJECT OF ACCESS
RH/$\overline{\text{RL}}$; RESET ACTIVE LEVEL SELECT
RST ; RESET
W ; WRITE

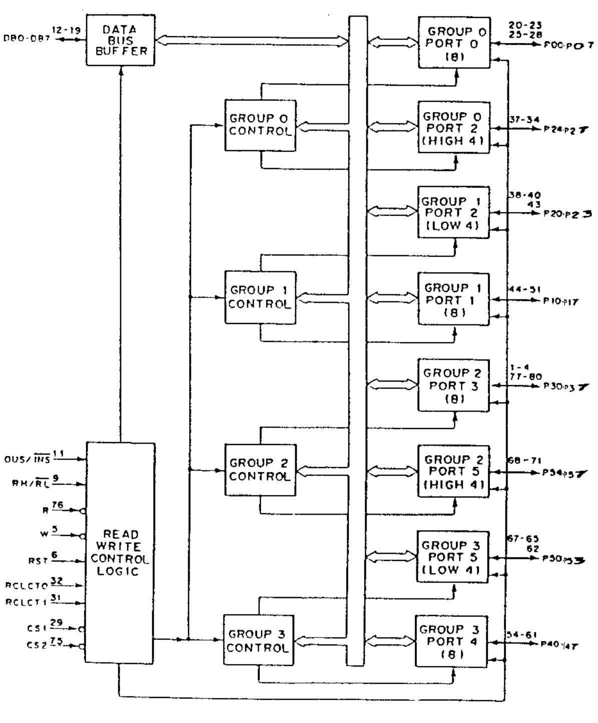
INPUT/OUTPUT
DB0 – DB7 ; DATA BUS
P00 – P07 ; PORT 0 (GROUP 0)
P10 – P17 ; PORT 1 (GROUP 1)
P20 – P27 ; PORT 2 (P20 – P23 : GROUP 1, P24 – P27 : GROUP 0)
P30 – P37 ; PORT 3 (GROUP 2)
P40 – P47 ; PORT 4 (GROUP 3)
P50 – P57 ; PORT 5 (P50 – P53 : GROUP 3, P54 – P57 : GROUP 2)

CS1	CS2	R	W	RSLCT1	RSLCT0	DATA BUS ACTION
0	1	0	1	0	0	PORT 0 DATA → MPU
0	1	0	1	0	1	PORT 1 DATA → MPU
0	1	0	1	1	0	PORT 2 DATA → MPU
0	1	1	0	0	0	MPU → PORT 0 DATA
0	1	1	0	0	1	MPU → PORT 1 DATA
0	1	1	0	1	0	MPU → PORT 2 DATA
0	1	1	0	1	1	MPU → CONTROL PARAMETER 1
1	0	0	1	0	0	PORT 3 DATA → MPU
1	0	0	1	0	1	PORT 4 DATA → MPU
1	0	0	1	1	0	PORT 5 DATA → MPU
1	0	1	0	0	0	MPU → PORT 3 DATA
1	0	1	0	0	1	MPU → PORT 4 DATA
1	0	1	0	1	0	MPU → PORT 5 DATA
1	0	1	0	1	1	MPU → CONTROL PARAMETER 2
1	1	X	X	X	X	DATA BUS ; HI-Z
0	1	0	1	1	1	PROHIBITE
0	1	1	1	X	X	DATA BUS ; HI-Z
1	0	0	1	1	1	PROHIBITE
1	0	1	1	X	X	DATA BUS ; HI-Z
0	0	X	X	X	X	PROHIBITE

RH/$\overline{\text{RL}}$	RST ACTIVE LEVEL
0	ACTIVE LOW
1	ACTIVE HIGH

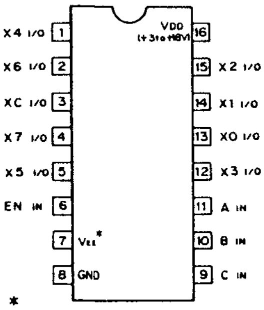
OUS/$\overline{\text{INS}}$	DB0 – DB7 READ DATA
0	PORT 0, PORT 3 LATCH DATA
1	PORT 0, PORT 3 EXIT TERMINAL DATA

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE
HI – Z : HIGH IMPEDANCE

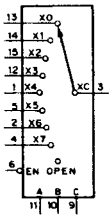

DB0-DB7 12-19
DATA BUS BUFFER
GROUP 0 PORT 0 (8)
20-23 25-28 P00-P07
GROUP 0 CONTROL
GROUP 0 PORT 2 (HIGH 4)
37-34 P24-P27
GROUP 1 PORT 2 (LOW 4)
38-40 43 P20-P23
GROUP 1 CONTROL
GROUP 1 PORT 1 (8)
44-51 P10-P17
GROUP 2 PORT 3 (8)
1-4 77-80 P30-P37
GROUP 2 CONTROL
GROUP 2 PORT 5 (HIGH 4)
68-71 P54-P57
GROUP 3 PORT 5 (LOW 4)
67-65 62 P50-P53
GROUP 3 CONTROL
GROUP 3 PORT 4 (8)
54-61 P40-P47
OUS/INS 11
RH/RL 9
R 76
W 5
RST 6
RCLCT0 32
RCLCT1 31
CS1 29
CS2 75
READ WRITE CONTROL LOGIC

MC14051BF (MOTOROLA) FLAT PACKAGE

C-MOS 8-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER
- TOP VIEW -


X4 I/O 1
X6 I/O 2
XC I/O 3
X7 I/O 4
X5 I/O 5
EN IN 6
7 VEE*
8 GND
VDD (+3 to +18V) 16
15 X2 I/O
14 X1 I/O
13 X0 I/O
12 X3 I/O
11 A IN
10 B IN
9 C IN

* VEE ; VDD - VEE = +3 to +18V


13 X0
14 X1
15 X2
12 X3
1 X4
5 X5
2 X6
4 X7
XC 3
6 EN
OPEN
A B C
11 10 9

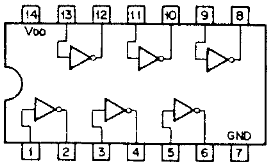
CONTROL INPUTS				SELECTED CHANNEL
EN	SELECT			
	C	B	A	
0	0	0	0	X0
0	0	0	1	X1
0	0	1	0	X2
0	0	1	1	X3
0	1	0	0	X4
0	1	0	1	X5
0	1	1	0	X6
0	1	1	1	X7
1	X	X	X	OPEN

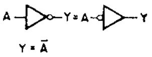
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

X0 to X7; ANALOG INPUTS/OUTPUTS
XC; COMMON INPUT/OUTPUT
A, B, C; CHANNEL SELECT INPUT
EN; ENABLE INPUT

MC74AC04M (MOTOROLA) FLAT PACKAGE
SN74HC04ANS (TI) FLAT PACKAGE

C-MOS HEX INVERTER
- TOP VIEW -


14 13 12 11 10 9 8
VDD
GND
1 2 3 4 5 6 7



Y = $\bar{A}$

A	Y
0	1
1	0

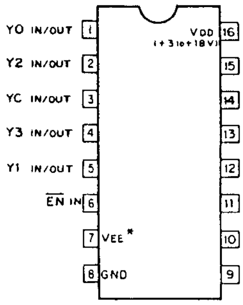
0: LOW LEVEL
1: HIGH LEVEL

NOTE :

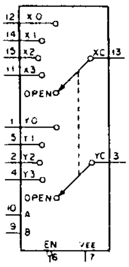
TYPE	VDD
74ACT04 TYPES 74HCT04 TYPES	+5V
TC74AC04F	+2 to +5.5V
TC74ACT04F	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

MC14052BF (MOTOROLA) FLAT PACKAGE

C-MOS DUAL 4-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS
- TOP VIEW -


Y0 IN/OUT 1
Y2 IN/OUT 2
YC IN/OUT 3
Y3 IN/OUT 4
Y1 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+3 to +18V) 16
15 X2 IN/OUT
14 X1 IN/OUT
13 XC IN/OUT
12 X0 IN/OUT
11 X3 IN/OUT
10 A IN
9 B IN

VEE* ; VDD - VEE = +3 to +18V

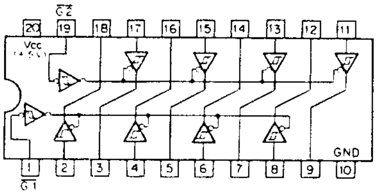

12 X0
14 X1
15 X2
11 X3
XC 13
OPEN
1 Y0
5 Y1
2 Y2
4 Y3
YC 3
OPEN
10 A
9 B
EN 6
VEE 7

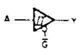
CONTROL INPUTS			"ON" CHANNEL
EN	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	OPEN

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

MC74F244M (MOTOROLA) FLAT PACKAGE
SN74ALS244BNS (TI)

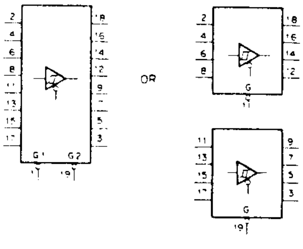
TTL 3-STATE SCHMITT TRIGGER BUFFER/DRIVER
- TOP VIEW -


G2
20 19 18 17 16 15 14 13 12 11
Vcc (+5V)
GND
1 2 3 4 5 6 7 8 9 10
G1



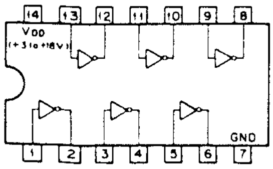
$\bar{G}$	A	Y
0	0	0
0	1	1
1	X	HI-Z

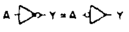
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE
HI-Z; HIGH IMPEDANCE


2 4 6 8 11 13 15 17
18 16 14 12 9 7 5 3
G1 G2
1 19
OR
2 4 6 8
18 16 14 12
G
1
11 13 15 17
9 7 5 3
G
19

MC14069UBF (MOTOROLA)

C-MOS INVERTER
- TOP VIEW -


14 13 12 11 10 9 8
VDD (+3 to +18V)
GND
1 2 3 4 5 6 7



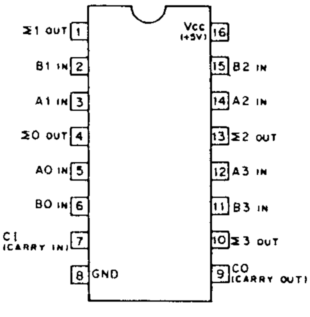
Y = $\bar{A}$

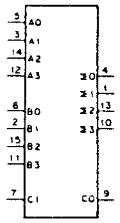
A	Y
0	1
1	0

0: LOW LEVEL
1: HIGH LEVEL

MC74F283M (MOTOROLA) FLAT PACKAGE

TTL 4-BIT BINARY FULL ADDER
- TOP VIEW -


Σ1 OUT 1
B1 IN 2
A1 IN 3
Σ0 OUT 4
A0 IN 5
B0 IN 6
CI (CARRY IN) 7
8 GND
Vcc (+5V) 16
15 B2 IN
14 A2 IN
13 Σ2 OUT
12 A3 IN
11 B3 IN
10 Σ3 OUT
9 CO (CARRY OUT)

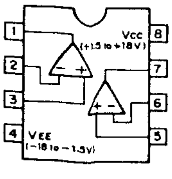

5 A0
3 A1
14 A2
12 A3
6 B0
2 B1
15 B2
11 B3
7 CI
Σ0 4
Σ1 1
Σ2 13
Σ3 10
CO 9

	2^4	2^3	2^2	2^1	2^0	DIGIT
					CI	CARRY IN
		A3	A2	A1	A0	DATA A IN
+)		B3	B2	B1	B0	DATA B IN
	CO	Σ3	Σ2	Σ1	Σ0	CARRY & SUM OUT

EX.					1	CI
		1	0	1	1	A
+)		1	0	1	0	B
	1	0	1	1	0	OUTPUTS
	CO	Σ3	Σ2	Σ1	Σ0	

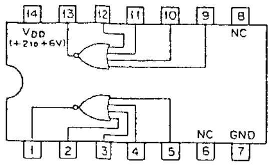
MC34128M (MOTOROLA) FLAT PACKAGE
TL082CPS (TI) FLAT PACKAGE

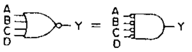
OPERATIONAL AMPLIFIER
(JFET INPUT)
- TOP VIEW -


1 2 3 4
VEE (-18 to -1.5V)
Vcc (+1.5 to +18V) 8
7 6 5

MC74HC4002F (MOTOROLA) FLAT PACKAGE

C-MOS 4-INPUT NOR GATE
- TOP VIEW -


14
13
12
11
10
9
8
VDD
(+2 to +6V)
NC
NC
GND
1
2
3
4
5
6
7


A
B
C
D
Y
=
A
B
C
D
Y

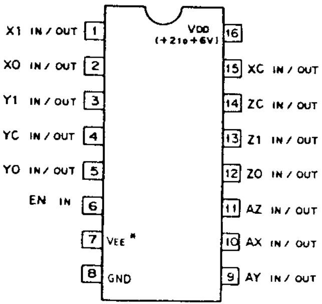
$Y = \overline{A + B + C + D}$
$= \bar{A} \cdot \bar{B} \cdot \bar{C} \cdot \bar{D}$

A	B	C	D	Y
0	0	0	0	1
X	X	X	1	0
X	X	1	X	0
X	1	X	X	0
1	X	X	X	0

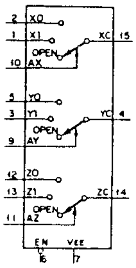
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

MC74HC4053F (MOTOROLA) FLAT PACKAGE

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER
- TOP VIEW -


X1 IN / OUT 1
X0 IN / OUT 2
Y1 IN / OUT 3
YC IN / OUT 4
Y0 IN / OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+2 to +6V) 16
15 XC IN / OUT
14 ZC IN / OUT
13 Z1 IN / OUT
12 Z0 IN / OUT
11 AZ IN / OUT
10 AX IN / OUT
9 AY IN / OUT

VEE*; VDD − VEE : +3 to +12V
VEE ≦ GND

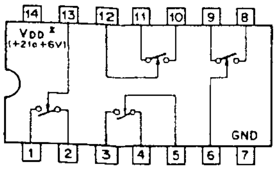

2 X0
1 X1
XC 15
OPEN
10 AX
5 Y0
3 Y1
YC 4
OPEN
9 AY
12 Z0
13 Z1
ZC 14
OPEN
11 AZ
EN
VEE
6
7

CONTROL INPUTS				ON CHANNEL		
EN	SELECT					
	C	B	A			
0	0	0	0	Z0	Y0	X0
0	0	0	1	Z0	Y0	X1
0	0	1	0	Z0	Y1	X0
0	0	1	1	Z0	Y1	X1
0	1	0	0	Z1	Y0	X0
0	1	0	1	Z1	Y0	X1
0	1	1	0	Z1	Y1	X0
0	1	1	1	Z1	Y1	X1
1	X	X	X	OPEN		

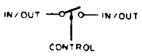
0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE

MC74HC4066F (MOTOROLA) FLAT PACKAGE

C-MOS BILATERAL ANALOG SWITCH
- TOP VIEW -

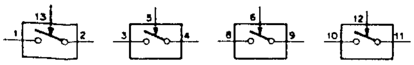

14
13
12
11
10
9
8
VDD※
(+2 to +6V)
GND
1
2
3
4
5
6
7

※MC74HC4066N; +3 to +12V


IN/OUT
IN/OUT
CONTROL

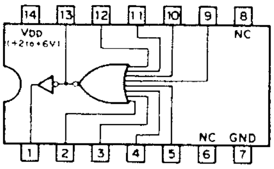
CONTROL	SWITCH
0	OFF
1	ON

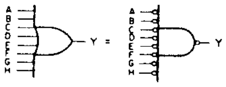
0; LOW LEVEL
1; HIGH LEVEL


13
1
2
5
3
4
6
8
9
12
10
11

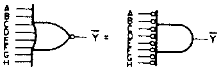
MC74HC4078F (MOTOROLA)

C-MOS 8-INPUT OR/NOR GATE
- TOP VIEW -


14
13
12
11
10
9
8
VDD
(+2 to +6V)
NC
NC
GND
1
2
3
4
5
6
7


A
B
C
D
E
F
G
H
Y
=
A
B
C
D
E
F
G
H
Y

$Y = A + B + C + D + E + F + G + H$
$= \overline{\bar{A} \cdot \bar{B} \cdot \bar{C} \cdot \bar{D} \cdot \bar{E} \cdot \bar{F} \cdot \bar{G} \cdot \bar{H}}$


A
B
C
D
E
F
G
H
$\bar{Y}$
=
A
B
C
D
E
F
G
H
$\bar{Y}$

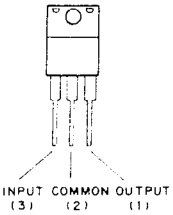
$\bar{Y} = \overline{A + B + C + D + E + F + G + H}$
$= \bar{A} \cdot \bar{B} \cdot \bar{C} \cdot \bar{D} \cdot \bar{E} \cdot \bar{F} \cdot \bar{G} \cdot \bar{H}$

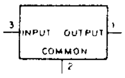
A	B	C	D	E	F	G	H	Y	$\bar{Y}$
0	0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	1	0
0	0	0	0	0	0	1	0	1	0
0	0	0	0	0	0	1	1	1	0
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	1	0
1	1	1	1	1	1	1	0	1	0
1	1	1	1	1	1	1	1	1	0

0; LOW LEVEL
1; HIGH LEVEL

NJM7805FA (JRC) + 5V

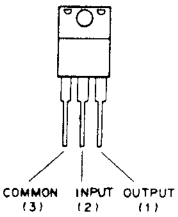
POSITIVE VOLTAGE REGULATOR
- FRONT VIEW -

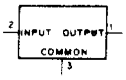

INPUT
(3)
COMMON
(2)
OUTPUT
(1)


3
INPUT
OUTPUT
1
COMMON
2

NJM7909FA (JRC) − 9V

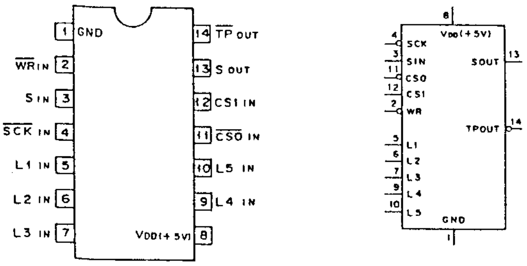
NEGATIVE VOLTAGE REGULATOR
- FRONT VIEW -


COMMON
(3)
INPUT
(2)
OUTPUT
(1)


2
INPUT
OUTPUT
1
COMMON
3

RTC4553B (EPSON)

C-MOS REAL TIME CLOCK


1 GND
WR IN 2
S IN 3
SCK IN 4
L1 IN 5
L2 IN 6
L3 IN 7
VDD(+5V) 8
9 L4 IN
10 L5 IN
11 CS0 IN
12 CS1 IN
13 S OUT
14 TP OUT
SCK
SIN
CS0
CS1
WR
L1
L2
L3
L4
L5
VDD(+5V)
SOUT
TPOUT
GND

INPUT

$\overline{\text{CS0}}$: CHIP SELECT (L : ACCESS ENABLE, H : SOUT HIGH Z)

CS1 : POWER DOWN DETECTION

L1 – L5 : TEST IN

$\overline{\text{SCK}}$: SERIAL SYNC SIGNAL

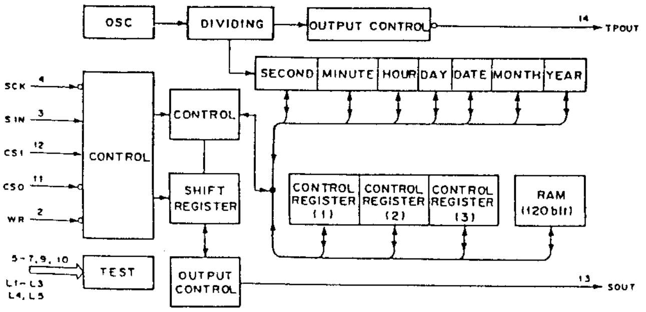
SIN : SERIAL ADDRESS/DATA

$\overline{\text{WR}}$: WRITING SELECT (L : WRITING, H : READING)

OUTPUT

SOUT : SERIAL ADDRESS/DATA

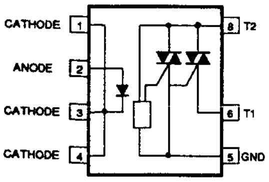
$\overline{\text{TPOUT}}$: REFERENCE SIGNAL


OSC
DIVIDING
OUTPUT CONTROL
14 TPOUT
SECOND
MINUTE
HOUR
DAY
DATE
MONTH
YEAR
SCK 4
SIN 3
CS1 12
CS0 11
WR 2
CONTROL
CONTROL
SHIFT REGISTER
CONTROL REGISTER (1)
CONTROL REGISTER (2)
CONTROL REGISTER (3)
RAM (120bit)
5-7, 9, 10
L1-L3
L4, L5
TEST
OUTPUT CONTROL
13 SOUT

S16MD01 (SHARP)

SOLID STATE RELAY

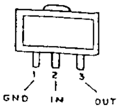
— TOP VIEW —

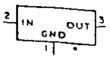

CATHODE 1
ANODE 2
CATHODE 3
CATHODE 4
8 T2
6 T1
5 GND

S-81250HG-RD-S (SEIKO I AND E) +5V FLAT PACKAGE

THREE TERMINAL POSITIVE VOLTAGE REGULATOR

– TOP VIEW –

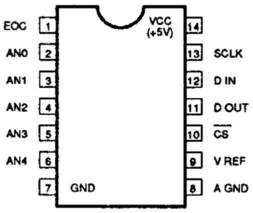

1
2
3
GND
IN
OUT

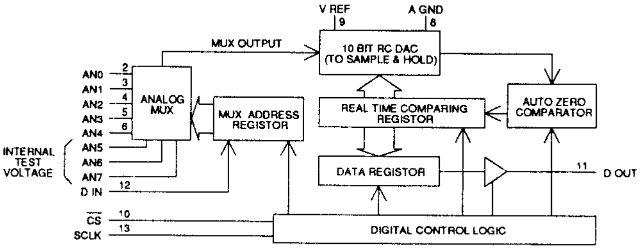

2
IN
OUT
3
GND
1

SC370605D (MOTOROLA) FLAT PACKAGE

C-MOS 10BIT A/D CONVERTER

— TOP VIEW —


EOC 1
AN0 2
AN1 3
AN2 4
AN3 5
AN4 6
7 GND
VCC (+5V) 14
13 SCLK
12 D IN
11 D OUT
10 CS
9 V REF
8 A GND

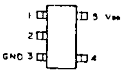

V REF 9
A GND 8
MUX OUTPUT
10 BIT RC DAC (TO SAMPLE & HOLD)
AN0 2
AN1 3
AN2 4
AN3 5
AN4 6
AN5
AN6
AN7
INTERNAL TEST VOLTAGE
ANALOG MUX
MUX ADDRESS REGISTOR
REAL TIME COMPARING REGISTOR
AUTO ZERO COMPARATOR
DATA REGISTOR
11 D OUT
D IN 12
CS 10
SCLK 13
DIGITAL CONTROL LOGIC

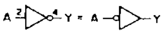
SC7S04F (MOTOROLA) CHIP PACKAGE
TC4S69F (TOSHIBA) CHIP PACKAGE

C-MOS INVERTER

(SCALE 6/1)

TOP VIEW


1
2
GND 3
5 VDD
4



$Y = \overline{A}$

A	Y
0	1
1	0

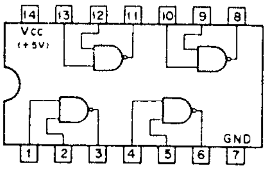
0; LOW LEVEL
1; HIGH LEVEL

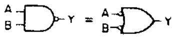
TYPE	VDD
7S04F 7SU04F	+ 2 to + 6V
4S69F 4SU59F	+ 3 to + 18V

SN74ALS00ANS (TI) FLAT PACKAGE

TTL 2-INPUT POSITIVE-NAND GATE

– TOP VIEW –


14
13
12
11
10
9
8
Vcc (+5V)
GND
1
2
3
4
5
6
7



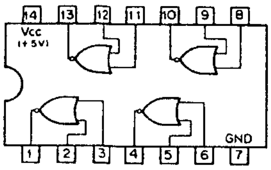
$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

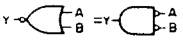
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0; LOW LEVEL
1; HIGH LEVEL

SN74ALS02NS (TI) FLAT PACKAGE

TTL 2-INPUT POSITIVE-NOR GATE
- TOP VIEW -


14
13
12
11
10
9
8
Vcc
(+5V)
GND
1
2
3
4
5
6
7



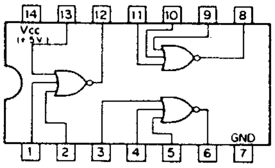
$Y=\overline{A+B}=\bar{A}\cdot\bar{B}$

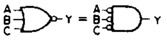
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

0: LOW LEVEL
1; HIGH LEVEL

SN74ALS27NS (TI) FLAT PACKAGE

TTL 3-INPUT POSITIVE-NOR GATE
- TOP VIEW -


14
13
12
11
10
9
8
Vcc
(+5V)
GND
1
2
3
4
5
6
7



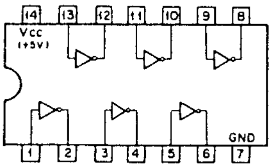
$Y=\overline{A+B+C}=\bar{A}\ \bar{B}\ \bar{C}$

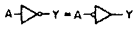
A	B	C	Y
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	0

0; LOW LEVEL
1; HIGH LEVEL

SN74ALS04BNS (TI) FLAT PACKAGE

TTL INVERTER
- TOP VIEW -


14
13
12
11
10
9
8
Vcc
(+5V)
GND
1
2
3
4
5
6
7



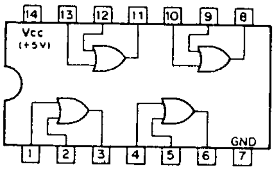
$Y=\bar{A}$

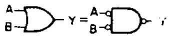
A	Y
0	1
1	0

0; LOW LEVEL
1; HIGH LEVEL

SN74ALS32NS (TI) FLAT PACKAGE

TTL 2-INPUT POSITIVE-OR GATE
- TOP VIEW -


14
13
12
11
10
9
8
Vcc
(+5V)
GND
1
2
3
4
5
6
7



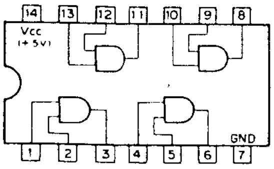
$Y=A+B=\overline{\bar{A}\cdot\bar{B}}$

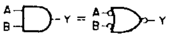
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0: LOW LEVEL
1: HIGH LEVEL

SN74ALS08NS (TI) FLAT PACKAGE

TTL 2-INPUT POSITIVE-AND GATE
— TOP VIEW —


14
13
12
11
10
9
8
Vcc
(+5V)
GND
1
2
3
4
5
6
7



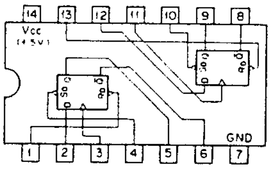
$Y=A\cdot B=\overline{\bar{A}+\bar{B}}$

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

0; LOW LEVEL
1; HIGH LEVEL

SN74ALS74ANS (TI) FLAT PACKAGE

TTL D-TYPE FLIP FLOP WITH DIRECT SET/RESET
- TOP VIEW -

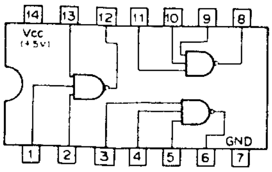

14
13
12
11
10
9
8
Vcc
(+5V)
GND
1
2
3
4
5
6
7

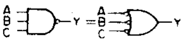
INPUTS				OUTPUTS	
$\overline{S_D}$	$\overline{R_D}$	CK	D	Qn+1	$\overline{Qn+1}$
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1*	1*
1	1	⎍	1	1	0
1	1	⎍	0	0	1
1	1	0	X	Qn	$\overline{Qn}$

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE
1*; NONSTABLE

SN74ALS10ANS (TI) FLAT PACKAGE

TTL 3-INPUT POSITIVE NAND GATE
— TOP VIEW —


14
13
12
11
10
9
8
Vcc
(+5V)
GND
1
2
3
4
5
6
7



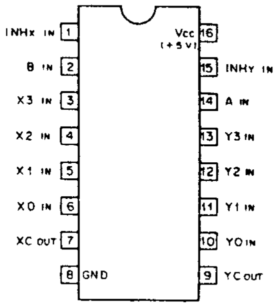
$Y=\overline{ABC}=\bar{A}+\bar{B}+\bar{C}$

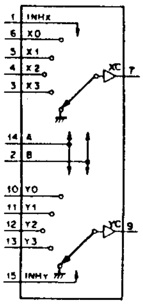
A	B	C	Y
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

0 : LOW LEVEL
1 : HIGH LEVEL

SN74ALS153NS (TI) FLAT PACKAGE

TTL 4-LINE-TO-1-LINE DATA SELECTOR/MULTIPLEXER
- TOP VIEW -


INHx IN 1
B IN 2
X3 IN 3
X2 IN 4
X1 IN 5
X0 IN 6
XC OUT 7
8 GND
Vcc (+5V) 16
15 INHY IN
14 A IN
13 Y3 IN
12 Y2 IN
11 Y1 IN
10 Y0 IN
9 YC OUT

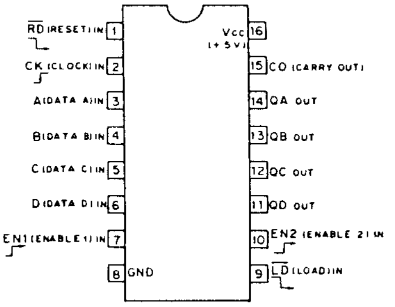

1 INHx
6 X0
5 X1
4 X2
3 X3
XC
7
14 A
2 B
10 Y0
11 Y1
12 Y2
13 Y3
YC
9
15 INHY

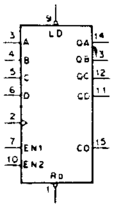
CONTROL IN			ON CHANNEL
INH	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	GND

0: LOW LEVEL
1: HIGH LEVEL
X: DON'T CARE

SN74ALS163BNS (TI) FLAT PACKAGE

TTL PRESETTABLE SYNCHRONOUS 4-BIT BINARY COUNTER
- TOP VIEW -


RD (RESET) IN 1
CK (CLOCK) IN 2
A (DATA A) IN 3
B (DATA B) IN 4
C (DATA C) IN 5
D (DATA D) IN 6
EN1 (ENABLE 1) IN 7
8 GND
Vcc (+5V) 16
15 CO (CARRY OUT)
14 QA OUT
13 QB OUT
12 QC OUT
11 QD OUT
10 EN2 (ENABLE 2) IN
9 LD (LOAD) IN


9
LD
3 A
4 B
5 C
6 D
2
7 EN1
10 EN2
QA 14
QB 13
QC 12
QD 11
CO 15
RD
1

MODE SELECTION

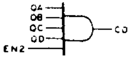
CONTROL INPUTS				MODE
$\overline{RD}$	$\overline{LD}$	EN1	EN2	
0	X	X	X	RESET (SYNCHRONOUS)
1	0	X	X	PRESET (SYNCHRONOUS)
1	1	0	X	NO COUNT
1	1	X	0	NO COUNT
1	1	1	1	COUNT

0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE

COUNT SEQUENCE

COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

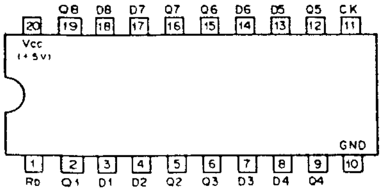
CARRY OUTPUT "CO"

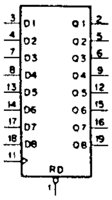

QA
QB
QC
QD
EN2
CO

CO IS HIGH WHEN EN2 INPUT IS HIGH AND COUNT IS "15".

SN74ALS273NS (TI) FLAT PACKAGE

TTL D-TYPE FLIP-FLOP WITH DIRECT RESET
- TOP VIEW -

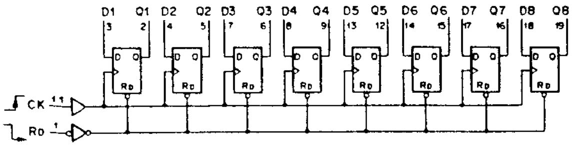

Q8 D8 D7 Q7 Q6 D6 D5 Q5 CK
20 19 18 17 16 15 14 13 12 11
Vcc (+5V)
GND
1 2 3 4 5 6 7 8 9 10
RD Q1 D1 D2 Q2 Q3 D3 D4 Q4


3 D1 Q1 2
4 D2 Q2 5
7 D3 Q3 6
8 D4 Q4 9
13 D5 Q5 12
14 D6 Q6 15
17 D7 Q7 16
18 D8 Q8 19
11
RD
1

EACH FLIP-FLOP

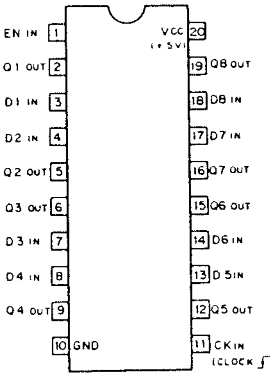
INPUTS			OUT
RD	CK	D	Q
0	X	X	0
1	ʃ	0	0
1	ʃ	1	1
1	0	X	Q0

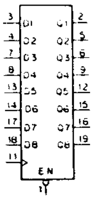
0 ;LOW LEVEL
1 ;HIGH LEVEL
X ;DON'T CARE


D1 Q1 D2 Q2 D3 Q3 D4 Q4 D5 Q5 D6 Q6 D7 Q7 D8 Q8
3 2 4 5 7 6 8 9 13 12 14 15 17 16 18 19
D Q
RD
CK 11
RD 1

SN74ALS374ANS (TI)

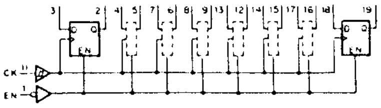
TTL 3-STATE OUTPUTS OCTAL D-TYPE FLIP-FLOP
- TOP VIEW -


EN IN 1
Q1 OUT 2
D1 IN 3
D2 IN 4
Q2 OUT 5
Q3 OUT 6
D3 IN 7
D4 IN 8
Q4 OUT 9
10 GND
VCC (+5V) 20
19 Q8 OUT
18 D8 IN
17 D7 IN
16 Q7 OUT
15 Q6 OUT
14 D6 IN
13 D5 IN
12 Q5 OUT
11 CK IN (CLOCK ʃ)


3 D1 Q1 2
4 D2 Q2 5
7 D3 Q3 6
8 D4 Q4 9
13 D5 Q5 12
14 D6 Q6 15
17 D7 Q7 16
18 D8 Q8 19
11
EN
1

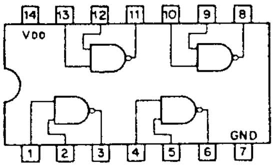
INPUTS			OUT
EN	D	CK	Q
0	1	ʃ	1
0	0	ʃ	0
0	X	0	Qo
1	X	X	HI-Z

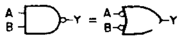
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE


3 2 4 5 7 6 8 9 13 12 14 15 17 16 18 19
D Q
EN
CK 11
EN 1

SN74HC00ANS (TI) FLAT PACKAGE

C-MOS QUAD 2-INPUT NAND GATE
- TOP VIEW -


14 13 12 11 10 9 8
VDD
GND
1 2 3 4 5 6 7



$Y = \overline{A \cdot B} = \bar{A} + \bar{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

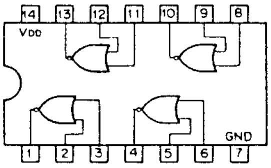
0;LOW LEVEL
1;HIGH LEVEL

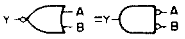
NOTE :

TYPE	VDD
TC74AC00P TC74AC00F	+2 to +5.5V
MC74HCT00N 74ACT00PC	+5V
OTHER TYPES	+2 to +6V

SN74HC02ANS (TI) FLAT PACKAGE

C-MOS QUAD 2-INPUT NOR GATE
- TOP VIEW -


14 13 12 11 10 9 8
VDD
GND
1 2 3 4 5 6 7



$Y = \overline{A + B} = \bar{A} \cdot \bar{B}$

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

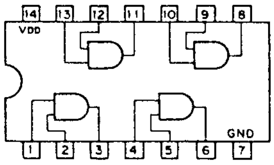
0;LOW LEVEL
1;HIGH LEVEL

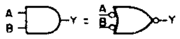
NOTE :

TYPE	VDD
TC74AC02F	+2 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC08ANS (TI) FLAT PACKAGE

C-MOS QUAD 2-INPUT AND GATE
- TOP VIEW -


14 13 12 11 10 9 8
VDD
GND
1 2 3 4 5 6 7



$Y = A \cdot B = \overline{\bar{A} + \bar{B}}$

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

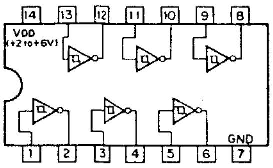
0 ; LOW LEVEL
1 ; HIGH LEVEL

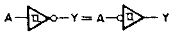
NOTE :

TYPE	VDD
TC74AC08F	+2 to +5.5V
OTHER TYPES	+2 to +6V

SN74HA14ANS (TI) FLAT PACKAGE

C-MOS SCHMITT TRIGGER INVERTER
- TOP VIEW -

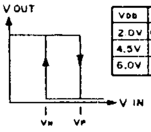

14
13
12
11
10
9
8
VDD
(+2 to+6V)
GND
1
2
3
4
5
6
7



$Y = \overline{A}$

A	Y
0	1
1	0

0;LOW LEVEL
1;HIGH LEVEL



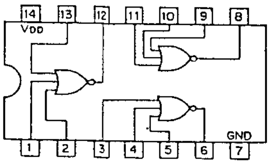
VDD	VN	VP
2.0V	0.75V	1.25V
4.5V	1.9V	2.7V
6.0V	2.6V	3.6V

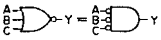
NOTE :

TYPE	VDD
74AC/74HC	+2 to +6V
TC74AC14	+2 to +5.5V

SN74HC27ANS (TI) FLAT PACKAGE

C-MOS 3-LINE POSITIVE-NOR GATE
- TOP VIEW -


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = \overline{A+B+C} = \overline{A} \cdot \overline{B} \cdot \overline{C}$

A	B	C	Y
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	0

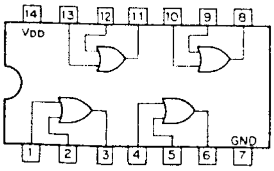
0 : LOW LEVEL
1 : HIGH LEVEL

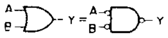
NOTE :

TYPE	VDD
TC40H	+ 2 to + 8V
OTHERS	+ 2 to + 6V

SN74HC32ANS (TI) FLAT PACKAGE

C-MOS 2-INPUT OR GATE
- TOP VIEW -


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

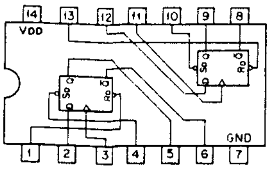
0:LOW LEVEL
1:HIGH LEVEL

NOTE :

TYPE	VDD
TC74AC32	+2 to +5.5V
OTHER TYPES	+2 to +6V

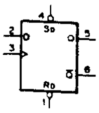
SN74ALS74ANS (TI) FLAT PACKAGE

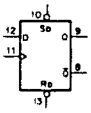
C-MOS D-TYPE FLIP FLOP WITH DIRECT SET/RESET
- TOP VIEW -


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7

INPUTS				OUTPUTS	
$\overline{S_D}$	$\overline{R_D}$	CK	D	Qn+1	$\overline{Qn+1}$
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1	1
1	1	↑	1	1	0
1	1	↑	0	0	1
1	1	0	X	Qn	$\overline{Qn}$

0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE


4
SD
2
D
3
Q
5
Q
6
RD
1

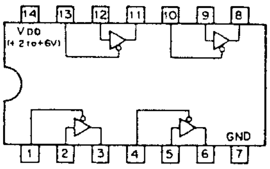

10
SD
12
D
11
Q
9
Q
8
RD
13

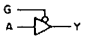
NOTE :

TYPE	VDD
74ACT	+5V
TC74AC74F	+2 to +5.5V
TC74ACT74F	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC125ANS (TI) FLAT PACKAGE

C-MOS BUS BUFFER GATES WITH 3-STATE OUTPUT
- TOP VIEW -


14
13
12
11
10
9
8
VDD
(+2 to+6V)
GND
1
2
3
4
5
6
7

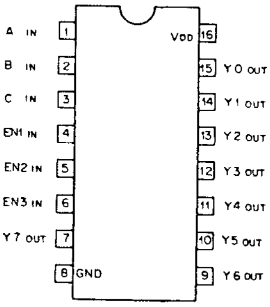


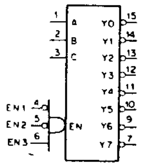
G	A	Y
0	0	0
0	1	1
1	X	HI－Z

0;LOW LEVEL X;DON'T CARE
1;HIGH LEVEL HI-Z;HIGH IMPEDANCE

SN74HC138ANS (TI) FLAT PACKAGE

C-MOS 3-TO-8 LINE DECODER/DEMULTIPLEXER
- TOP VIEW -


A IN
1
B IN
2
C IN
3
EN1 IN
4
EN2 IN
5
EN3 IN
6
Y7 OUT
7
8
GND
VDD
16
15
Y0 OUT
14
Y1 OUT
13
Y2 OUT
12
Y3 OUT
11
Y4 OUT
10
Y5 OUT
9
Y6 OUT


1
A
2
B
3
C
EN1
4
EN2
5
EN3
6
EN
Y0
15
Y1
14
Y2
13
Y3
12
Y4
11
Y5
10
Y6
9
Y7
7

INPUTS				OUTPUTS							
EN	C	B	A	Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0
0	X	X	X	1	1	1	1	1	1	1	1
1	0	0	0	1	1	1	1	1	1	1	0
1	0	0	1	1	1	1	1	1	1	0	1
1	0	1	0	1	1	1	1	1	0	1	1
1	0	1	1	1	1	1	1	0	1	1	1
1	1	0	0	1	1	1	0	1	1	1	1
1	1	0	1	1	1	0	1	1	1	1	1
1	1	1	0	1	0	1	1	1	1	1	1
1	1	1	1	0	1	1	1	1	1	1	1

$EN = \overline{EN1} \cdot \overline{EN2} \cdot EN3$

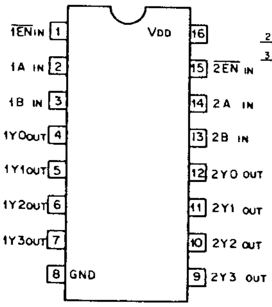
0 : LOW LEVEL
1 : HIGH LEVEL
X ; DON'T CARE

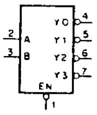
NOTE :

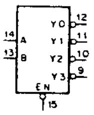
TYPE	VDD
74AC/74HC	+2 to +6V
74ACT/74HCT	+5V
TC74AC138	+2 to +5.5V

SN74HC139ANS (TI) FLAT PACKAGE

C-MOS DUAL 2-TO-4 DECODER/DEMULTIPLEXER
- TOP VIEW -


1EN IN
1
1A IN
2
1B IN
3
1Y0 OUT
4
1Y1 OUT
5
1Y2 OUT
6
1Y3 OUT
7
8
GND
VDD
16
15
2EN IN
14
2A IN
13
2B IN
12
2Y0 OUT
11
2Y1 OUT
10
2Y2 OUT
9
2Y3 OUT


2
A
3
B
Y0
4
Y1
5
Y2
6
Y3
7
EN
1


14
A
13
B
Y0
12
Y1
11
Y2
10
Y3
9
EN
15

INPUTS			OUTPUTS			
EN	B	A	Y3	Y2	Y1	Y0
0	0	0	1	1	1	0
0	0	1	1	1	0	1
0	1	0	1	0	1	1
0	1	1	0	1	1	1
1	X	X	1	1	1	1

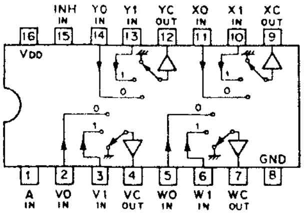
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

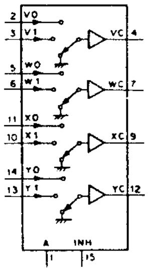
NOTE :

TYPE	VDD
74AC/74HC	+2 to +6V
74ACT	+5V
TC74AC139	+2 to +5.5V

SN74HC157ANS (TI) FLAT PACKAGE

C-MOS QUAD 2-LINE-TO-1-LINE DATA SELECTOR/MULTIPLEXER
- TOP VIEW -


INH IN
Y0 IN
Y1 IN
YC OUT
X0 IN
X1 IN
XC OUT
VDD
GND
A
V0 IN
V1 IN
VC OUT
W0 IN
W1 IN
WC OUT


V0
V1
VC
W0
W1
WC
X0
X1
XC
Y0
Y1
YC
A
INH

NOTE :

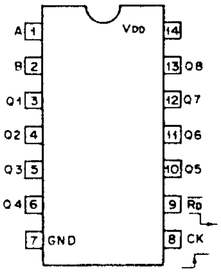
TYPE	VDD
74ACT157	+5V
TC74AC157P TC74AC157F	+2 to +5.5V
OTHER TYPES	+2 to +6V

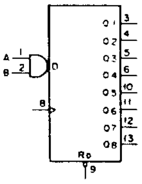
CONT. IN		ON CHANNEL
INH	A	
0	0	0
0	1	1
1	X	GND

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

SN74HC164ANS (TI) FLAT PACKAGE

C-MOS 8-BIT SERIAL-IN/PARALLEL-OUT SHIFT REGISTER
- TOP VIEW -


A
B
Q1
Q2
Q3
Q4
GND
VDD
Q8
Q7
Q6
Q5
RD
CK

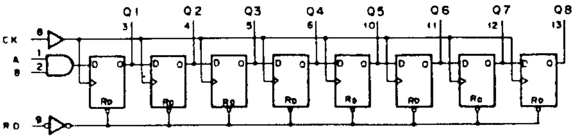

A
B
D
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
RD

INPUTS				OUTPUTS			
RD	CK	A	B	Q1	Q2	----	Q8
0	X	X	X	0	0	0	0
1	0	X	X	Q1o	Q2o	----	Q8o
1	↑	1	1	1	Q1n	----	Q7n
1	↑	0	X	0	Q1n	----	Q7n
1	↑	X	0	0	Q1n	----	Q7n

0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE

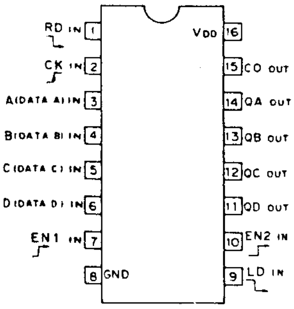
NOTE :

TYPE	VDD
TC74AC164 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V


Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
CK
A
B
RD

SN74HC163ANS (TI) FLAT PACKAGE

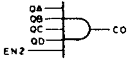
C-MOS PRESETTABLE SYNCHRONOUS 4-BIT BINARY COUNTER
- TOP VIEW -


RD IN
CK IN
A(DATA A) IN
B(DATA B) IN
C(DATA C) IN
D(DATA D) IN
EN1 IN
GND
VDD
CO OUT
QA OUT
QB OUT
QC OUT
QD OUT
EN2 IN
LD IN

MODE SELECTION

CONTROL INPUTS				MODE
RD	LD	EN1	EN2	
0	X	X	X	RESET (SYNCHRONOUS)
1	0	X	X	PRESET (SYNCHRONOUS)
1	1	0	X	NO COUNT
1	1	X	0	NO COUNT
1	1	1	1	COUNT

CARRY OUTPUT "CO"


QA
QB
QC
QD
EN2
CO

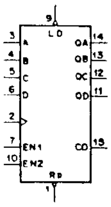
CO IS HIGH WHEN EN2 INPUT IS HIGH AND COUNT IS "15".

COUNT SEQUENCE

COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

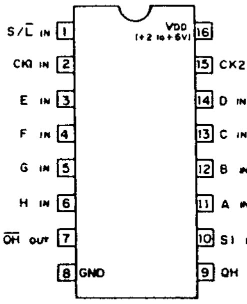
NOTE :

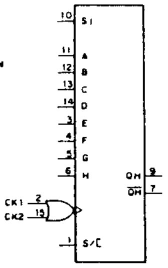
TYPE	VDD
74ACT	+5V
TC74AC163	+2 to +5.5V
OTHER TYPES	+2 to +6V


LD
A
B
C
D
EN1
EN2
RD
QA
QB
QC
QD
CO

SN74HC165ANS (TI) FLAT PACKAGE

C-MOS SERIAL- OR PARALLEL-INPUT SHIFT REGISTER
- TOP VIEW -

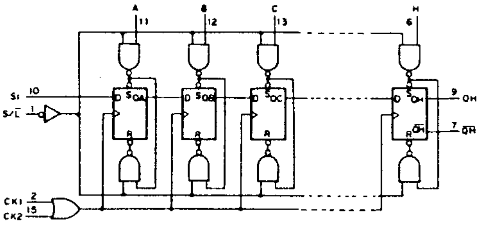

S/L̄ IN
CK1 IN
E IN
F IN
G IN
H IN
Q̄H OUT
GND
VDD (+2 to +6V)
CK2 IN
D IN
C IN
B IN
A IN
SI IN
QH OUT


SI
A
B
C
D
E
F
G
H
CK1
CK2
S/L̄
QH
Q̄H

SI ; SERIAL DATA IN
A–H ; PARALLEL DATA IN
CK1,CK2; CLOCK IN (↑)
S/L̄ ; SHIFT/LOAD IN
QH Q̄H ; 8th BIT OUT (COMPLEMENTALY)

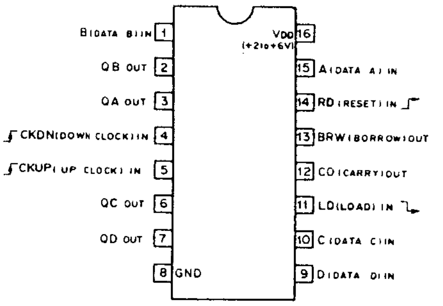
INPUTS				CONTENTS		OUTPUT	OPERATION
S/L̄	CK1+CK2	SI	A······H	QA	QB····	QH	
0	X	X	a······h	a	b·····	h	PARALLEL LOAD
1	↑	0	X	0	QAo···	QGo	RIGHT SHIFT
1	↑	1	X	1	QAo···	QGo	
1	↓	X	X	QAo	QBo···	QHo	NO COUNT
1	0	X	X	QAo	QBo···	QHo	
1	1	X	X	QAo	QBo···	QHo	

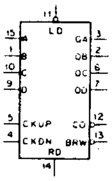
0 ; LOW LEVEL 1 ; HIGH LEVEL X ; DON'T CARE
a – h ; LEVEL OF INPUTS A–H
QAo–QHo ; LEVEL OF QA–QH BEFORE THE INDICATED INPUT CONDITIONS WERE ESTABLISHED


A
B
C
H
SI
S/L̄
CK1
CK2
QA
QB
QC
QH
Q̄H

SN74HC193ANS (TI) FLAT PACKAGE

C-MOS PRESETTABLE SYNCHRONOUS 4-BIT UP/DOWN COUNTER
- TOP VIEW -


B (DATA B) IN 1
QB OUT 2
QA OUT 3
CKDN(DOWN CLOCK) IN 4
CKUP(UP CLOCK) IN 5
QC OUT 6
QD OUT 7
8 GND
VDD (+2 to +6V) 16
15 A (DATA A) IN
14 RD (RESET) IN
13 BRW (BORROW) OUT
12 CO (CARRY) OUT
11 LD(LOAD) IN
10 C (DATA C) IN
9 D (DATA D) IN

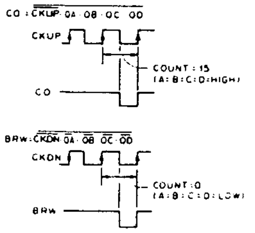

LD
CKUP
CKDN
RD
CO
BRW
QA
QB
QC
QD

CONTROL INPUT				MODE
RD	LD	CKUP	CKDN	
1	X	X	X	RESET TO ZERO
0	0	X	X	PRESET
0	1	ʃ	1	UP COUNT
0	1	1	ʃ	DOWN COUNT
0	1	1	1	NO COUNT

COUNT	OUTPUT			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

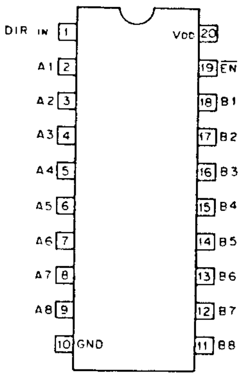
UP COUNT
DOWN COUNT

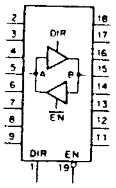
0, LOW LEVEL
1, HIGH LEVEL
X, DON'T CARE


CO : $\overline{CKUP}$·QA·QB·QC·QD
CKUP
COUNT : 15
(A·B·C·D:HIGH)
CO
BRW : $\overline{CKDN}$·$\overline{QA}$·$\overline{QB}$·$\overline{QC}$·$\overline{QD}$
CKDN
COUNT : 0
(A·B·C·D:LOW)
BRW

SN74HC245ANS (TI) FLAT PACKAGE

C-MOS BILATERAL BUS TRANSCEIVERS WITH 3-STATE OUTPUTS
- TOP VIEW -


DIR IN 1
A1 2
A2 3
A3 4
A4 5
A5 6
A6 7
A7 8
A8 9
10 GND
VDD 20
19 $\overline{EN}$ IN
18 B1
17 B2
16 B3
15 B4
14 B5
13 B6
12 B7
11 B8

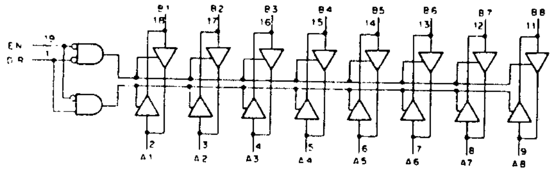

DIR
A
B
$\overline{EN}$
DIR
EN
1
19

EN	DIR	OPERATION
0	0	B to A
0	1	A to B
1	X	HI - Z

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE
HI-Z : HIGH IMPEDANCE

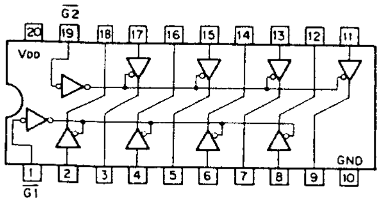
NOTE :

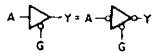
TYPE	VDD
AC HC	+2 to +6V
ACT HCT	+5V
TC74AC245F TC74AC245P	+2 to +5.5V


EN 19
DIR 1
B1 18
B2 17
B3 16
B4 15
B5 14
B6 13
B7 12
B8 11
A1 2
A2 3
A3 4
A4 5
A5 6
A6 7
A7 8
A8 9

SN74HC244ANS (TI) FLAT PACKAGE

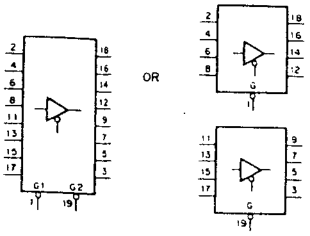
C-MOS BUS BUFFER WITH 3-STATE OUTPUTS
- TOP VIEW -


$\overline{G2}$
VDD
GND
$\overline{G1}$
20 19 18 17 16 15 14 13 12 11
1 2 3 4 5 6 7 8 9 10



G	A	Y
0	0	0
0	1	1
1	X	HI-Z

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE

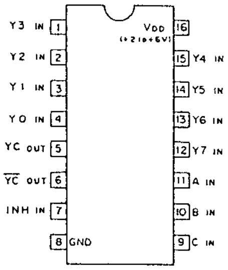

OR
G1
G2
G
1
19

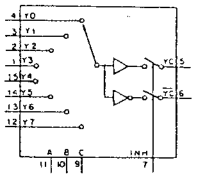
NOTE :

TYPE	VDD
AC HC 40H	+2 to +6V
ACT HCT	+5V

SN74HC251ANS (TI) FLAT PACKAGE

C-MOS 8-LINE-TO-1-LINE DATA SELECTOR/MULTIPLEXER WITH 3-STATE OUTPUT
- TOP VIEW -


Y3 IN 1
Y2 IN 2
Y1 IN 3
Y0 IN 4
YC OUT 5
$\overline{YC}$ OUT 6
INH IN 7
8 GND
VDD (+2 to +6V) 16
15 Y4 IN
14 Y5 IN
13 Y6 IN
12 Y7 IN
11 A IN
10 B IN
9 C IN

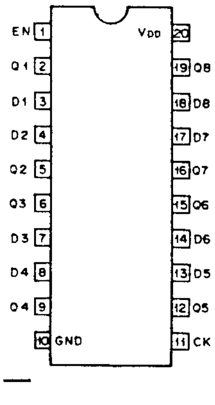

Y0
Y1
Y2
Y3
Y4
Y5
Y6
Y7
YC
$\overline{YC}$
A B C
INH

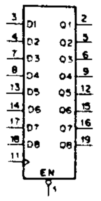
CONTROL IN				OUTPUT	
C	B	A	INH	YC	$\overline{YC}$
X	X	X	1	HI-Z	HI-Z
0	0	0	0	Y0	$\overline{Y0}$
0	0	1	0	Y1	$\overline{Y1}$
0	1	0	0	Y2	$\overline{Y2}$
0	1	1	0	Y3	$\overline{Y3}$
1	0	0	0	Y4	$\overline{Y4}$
1	0	1	0	Y5	$\overline{Y5}$
1	1	0	0	Y6	$\overline{Y6}$
1	1	1	0	Y7	$\overline{Y7}$

0 ; LOW LEVEL
1 ; HIGH LEVEL
HI-Z ; HIGH IMPEDANCE

SN74HC374ANS (TI)(V_{DD}=+2 to +6V) FLAT PACKAGE

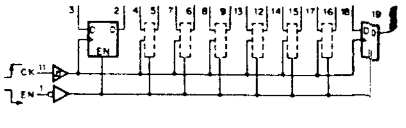
C-MOS 3-STATE OCTAL D-TYPE FLIP-FLOP
- TOP VIEW -


EN 1
Q1 2
D1 3
D2 4
Q2 5
Q3 6
D3 7
D4 8
Q4 9
10 GND
VDD 20
19 Q8
18 D8
17 D7
16 Q7
15 Q6
14 D6
13 D5
12 Q5
11 CK


D1 Q1
D2 Q2
D3 Q3
D4 Q4
D5 Q5
D6 Q6
D7 Q7
D8 Q8
EN

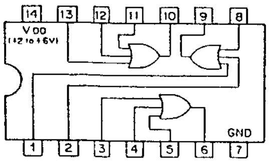
INPUTS			OUT
EN	D	CK	Q
0	1	ʃ	1
0	0	ʃ	0
0	X	0	Qo
1	X	X	HI-Z

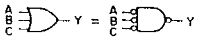
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE


CK 11
EN 1
3 2 4 5 7 6 8 9 13 12 14 15 17 16 18 19
D
EN

SN74HC4075ANS (TI) FLAT PACKAGE

C-MOS 3-INPUT OR GATE
- TOP VIEW -


14
13
12
11
10
9
8
VDD
(+2 to +6V)
GND
1
2
3
4
5
6
7



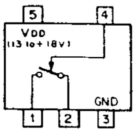
$Y = A + B + C = \overline{\bar{A} \cdot \bar{B} \cdot \bar{C}}$

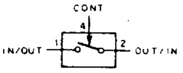
C	B	A	Y
0	0	0	0
X	X	1	1
X	1	X	1
1	X	X	1

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

TC4S66F (TOSHIBA) CHIP PACKAGE

C-MOS BILATERAL ANALOG SWITCH
- TOP VIEW -


5
4
VDD
(+3 to +18V)
GND
1
2
3


CONT
4
1
2
IN/OUT
OUT/IN

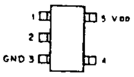
CONT	SWITCH
0	OFF
1	ON

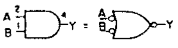
0 : LOW LEVEL
1 : HIGH LEVEL

TC4S81F (TOSHIBA) CHIP PACKAGE

C-MOS 2-INPUT AND GATE

(SCALE 6/1)
TOP VIEW


1
2
GND 3
5 VDD
4



$Y = A \cdot B = \overline{\bar{A} + \bar{B}}$

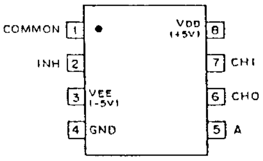
A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

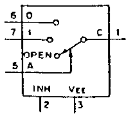
0 ; LOW LEVEL
1 ; HIGH LEVEL

TYPE	VDD
7S08F 7S08FU	+ 2 to + 6V
4S81F 14S81F	+ 3 to + 18V

TC4W53F (TOSHIBA) FALT PACKAGE

C-MOS 2-CHANNEL MULTIPLEXER/DEMULTIPLEXER
- TOP VIEW -


COMMON 1
INH 2
3 VEE (-5V)
4 GND
VDD (+5V) 8
7 CH1
6 CH0
5 A

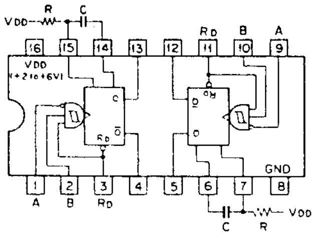

6
7
5
0
1
OPEN
A
C
1
INH
VEE
2
3

CONT. INPUT		ON CHANNEL
INH.	A	
0	0	0
0	1	1
1	X	OPEN

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE

TC74HC221AF (TOSHIBA) FLAT PACKAGE

C-MOS MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT
- TOP VIEW -


R
C
VDD
RD
B
A
16
15
14
13
12
11
10
9
VDD
(+2 to +6V)
GND
1
2
3
4
5
6
7
8
A
B
RD
C
R
VDD

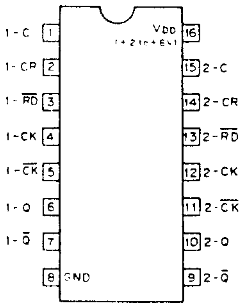
INPUTS			OUTPUTS	
RD	A	B	Q	$\bar{Q}$
0	X	X	0	1
X	1	X	0	1
X	X	0	0	1
1	0	↑	⊓	⊔
1	↓	1	⊓	⊔
↑	0	1	⊓	⊔

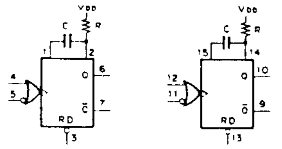
0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE

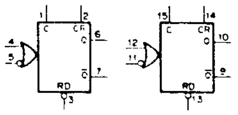
OUTPUT PULSE WIDTH = 0.7CR

TC74HC4538AF (TOSHIBA) FALT PACKAGE

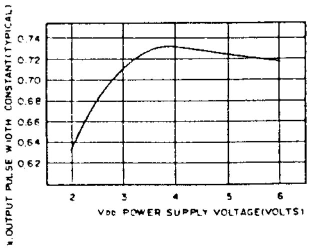
C-MOS DUAL RETRIGGERABLE / NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
- TOP VIEW -


1-C 1
1-CR 2
1-$\overline{RD}$ 3
1-CK 4
1-$\overline{CK}$ 5
1-Q 6
1-$\bar{Q}$ 7
8 GND
VDD (+2 to +6V) 16
15 2-C
14 2-CR
13 2-$\overline{RD}$
12 2-CK
11 2-$\overline{CK}$
10 2-Q
9 2-$\bar{Q}$

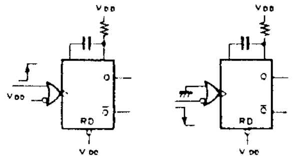

VDD
C
R
1
2
4
5
Q
6
$\bar{Q}$
7
RD
3
VDD
C
R
15
14
12
11
Q
10
$\bar{Q}$
9
RD
13


1
2
C
CR
4
5
Q
6
$\bar{Q}$
7
RD
3
15
14
C
CR
12
11
Q
10
$\bar{Q}$
9
RD
13

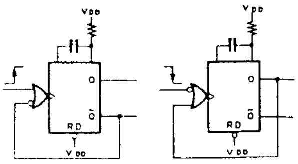
OUTPUT PULSE WIDTH = k·C·R



RETRIGGERABLE M.M.V

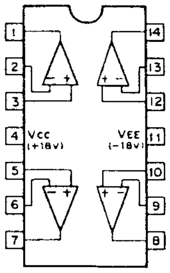

VDD
VDD
Q
$\bar{Q}$
RD
VDD
VDD
Q
$\bar{Q}$
RD
VDD

NON-RETRIGGERABLE M.M.V


VDD
Q
$\bar{Q}$
RD
VDD
VDD
Q
$\bar{Q}$
RD
VDD

TL064CNS (TI) FLAT PACKAGE

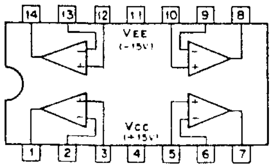
OPERATIONAL AMPLIFIER
(J FET-INPUT)
– TOP VIEW –



1
2
3
4 Vcc (+18V)
5
6
7
14
13
12
11 VEE (-18V)
10
9
8

TL084CNS (TI) FLAT PACKAGE

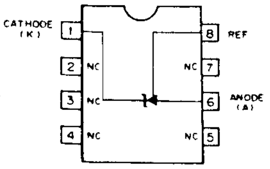
OPERATIONAL AMPLIFIER
(J FET-INPUT)
– TOP VIEW –



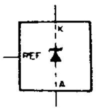
14 13 12 11 10 9 8
VEE (-15V)
Vcc (+15V)
1 2 3 4 5 6 7

TL431CPS (TI) FLAT PACKAGE

ADJUSTABLE PRECISION SHUNT REGULATOR
– TOP VIEW –

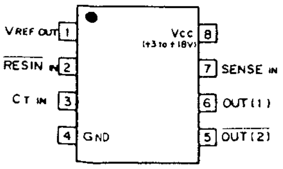


CATHODE (K)
1
2 NC
3 NC
4 NC
8 REF
NC 7
6 ANODE (A)
NC 5

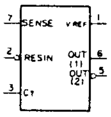


TL7705ACPS (TI) FLAT PACKAGE
TL7705CPS-B (TI) FLAT PACKAGE

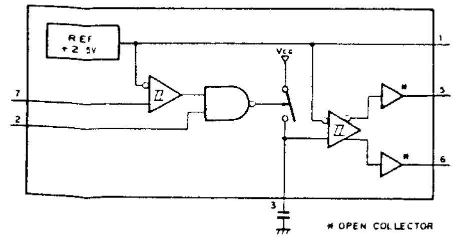
POWER VOLTAGE SUPERVISOR
– TOP VIEW –



VREF OUT 1
RESIN IN 2
CT IN 3
4 GND
Vcc (+3 to +18V) 8
7 SENSE IN
6 OUT(1)
5 OUT(2)



7 SENSE
VREF 1
2 RESIN
OUT (1) 6
OUT (2) 5
3 CT

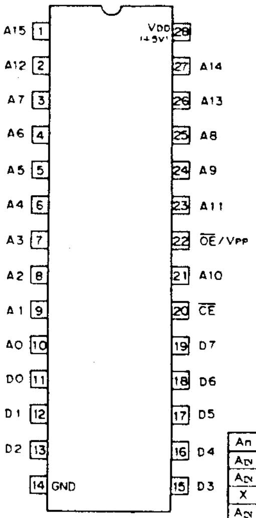


REF +2.5V
Vcc
1
7
2
5
6
3
*

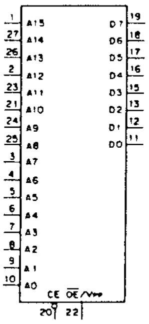
* OPEN COLLECTOR

27C512-15JL-S10V1.00
27C512-15JL-S11V1.00
TMS27C512-15JL (TI)

C-MOS 512K (65,536x8 = 524,288)-BIT ERASABLE PROM
– TOP VIEW –



A15 1
A12 2
A7 3
A6 4
A5 5
A4 6
A3 7
A2 8
A1 9
A0 10
D0 11
D1 12
D2 13
14 GND
VDD (+5V) 28
27 A14
26 A13
25 A8
24 A9
23 A11
22 OE/VPP
21 A10
20 CE
19 D7
18 D6
17 D5
16 D4
15 D3

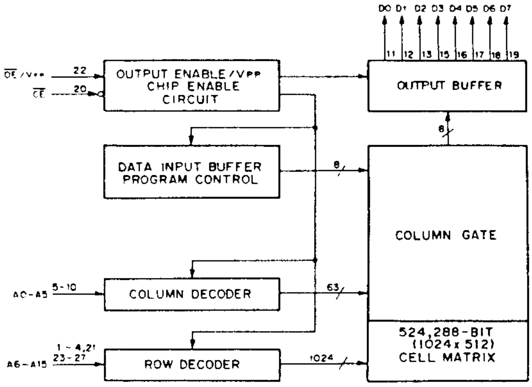


1 A15
27 A14
26 A13
2 A12
23 A11
21 A10
24 A9
25 A8
3 A7
4 A6
5 A5
6 A4
7 A3
8 A2
9 A1
10 A0
D7 19
D6 18
D5 17
D4 16
D3 15
D2 13
D1 12
D0 11
CE OE/VPP
20 22

A0 – A15 : ADDRESS INPUTS
$\overline{CE}$: CHIP ENABLE INPUT
D0 – D7 : DATA OUTPUTS
$\overline{OE}$: OUTPUT ENABLE INPUT
VPP : PROGRAM POWER SUPPLY

An	$\overline{CE}$	$\overline{OE}$/VPP	VDD	Dn	FUNCTION
AIN	0	0	+5V	DOUT	READ
AIN	0	1	+5V	HI-Z	OUTPUT DISABLE
X	1	X	+5V	HI-Z	STANDBY
AIN	0	+12.5V	+6V	DIN	PGM
AIN	0	0	+6V	DOUT	PGM VERIFY
X	1	+12.5V	+6V	HI-Z	PGM INH

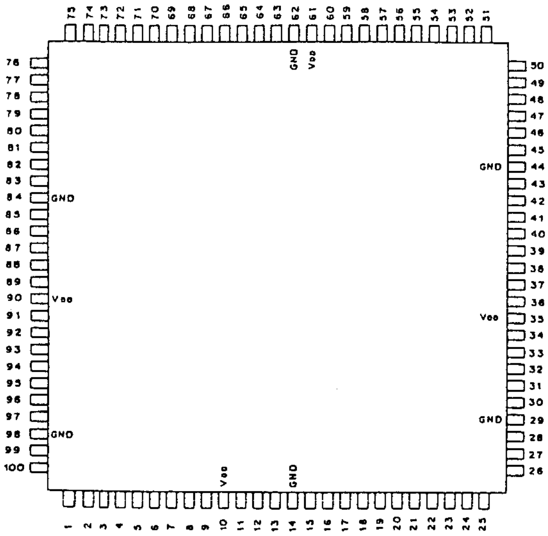
0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE
HI-Z : HIGH IMPEDANCE



D0 D1 D2 D3 D4 D5 D6 D7
11 12 13 15 16 17 18 19
OE/VPP 22
CE 20
OUTPUT ENABLE/VPP CHIP ENABLE CIRCUIT
OUTPUT BUFFER
8
DATA INPUT BUFFER PROGRAM CONTROL
8
COLUMN GATE
A0-A5 5-10
COLUMN DECODER
63
A6-A15 1-4,21 23-27
ROW DECODER
1024
524,288-BIT (1024x512) CELL MATRIX

TMP68301AF-12 (TOSHIBA)

C-MOS 16-BIT MICRO PROCESSOR
- TOP VIEW -

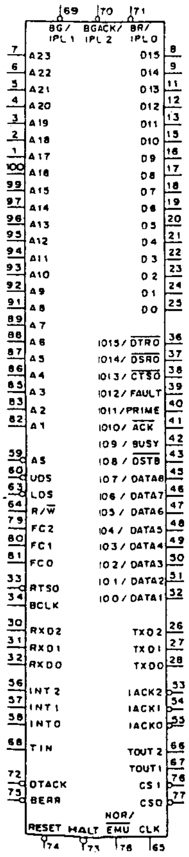


75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51
76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
GND
VDD

VDD= + 5.0V

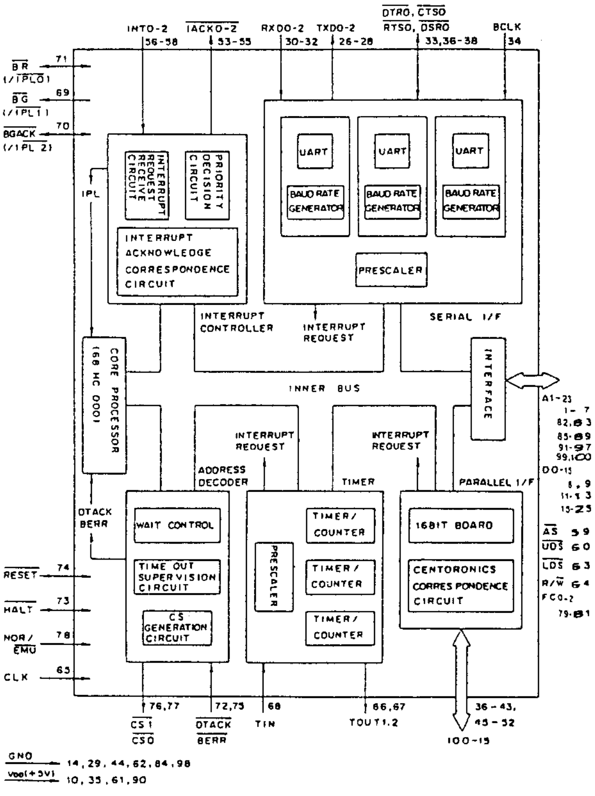
(VDD = +5.0 V)

PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	I/O	A17	26	O	TXD2	51	I/O	IO1/DATA2	76	O	$\overline{\mathrm{CS1}}$
2	I/O	A18	27	O	TXD1	52	I/O	IO0/DATA1	77	O	$\overline{\mathrm{CS0}}$
3	I/O	A19	28	O	TXD0	53	O	$\overline{\mathrm{IACK2}}$	78	I	NOR/$\overline{\mathrm{EMU}}$
4	I/O	A20	29	—	GND	54	O	$\overline{\mathrm{IACK1}}$	79	I/O	FC2
5	I/O	A21	30	I	RXD2	55	O	$\overline{\mathrm{IACK0}}$	80	I/O	FC1
6	I/O	A22	31	I	RXD1	56	I	INT2	81	I/O	FC0
7	I/O	A23	32	I	RXD0	57	I	INT1	82	I/O	A1
8	I/O	D15	33	I/O	$\overline{\mathrm{RTSO}}$	58	I	INT0	83	I/O	A2
9	I/O	D14	34	I	BCLK	59	I/O	$\overline{\mathrm{AS}}$	84	—	GND
10	—	VDD (+5.0 V)	35	—	VDD (+5.0 V)	60	I/O	$\overline{\mathrm{UDS}}$	85	I/O	A3
11	I/O	D13	36	I/O	IO15/$\overline{\mathrm{DTRO}}$	61	—	VDD (+5.0 V)	86	I/O	A4
12	I/O	D12	37	I/O	IO14/$\overline{\mathrm{DSRO}}$	62	—	GND	87	I/O	A5
13	I/O	D11	38	I/O	IO13/$\overline{\mathrm{CTSO}}$	63	I/O	$\overline{\mathrm{LDS}}$	88	I/O	A6
14	—	GND	39	I/O	IO12/FAULT	64	I/O	R/$\overline{\mathrm{W}}$	89	I/O	A7
15	I/O	D10	40	I/O	IO11/PRIME	65	I	CLK	90	—	VDD (+5.0 V)
16	I/O	D9	41	I/O	IO10/$\overline{\mathrm{ACK}}$	66	O	TOUT2	91	I/O	A8
17	I/O	D8	42	I/O	IO9/BUSY	67	O	TOUT1	92	I/O	A9
18	I/O	D7	43	I/O	IO8/$\overline{\mathrm{DSTB}}$	68	I	TIN	93	I/O	A10
19	I/O	D6	44	—	GND	69	O	$\overline{\mathrm{BG}}$/$\overline{\mathrm{IPL1}}$	94	I/O	A11
20	I/O	D5	45	I/O	IO7/DATA8	70	I/O	$\overline{\mathrm{BGACK}}$/$\overline{\mathrm{IPL2}}$	95	I/O	A12
21	I/O	D4	46	I/O	IO6/DATA7	71	I/O	$\overline{\mathrm{BR}}$/$\overline{\mathrm{IPL0}}$	96	I/O	A13
22	I/O	D3	47	I/O	IO5/DATA6	72	I	$\overline{\mathrm{DTACK}}$	97	I/O	A14
23	I/O	D2	48	I/O	IO4/DATA5	73	I/O	$\overline{\mathrm{HALT}}$	98	—	GND
24	I/O	D1	49	I/O	IO3/DATA4	74	I/O	$\overline{\mathrm{RESET}}$	99	I/O	A15
25	I/O	D0	50	I/O	IO2/DATA3	75	I	$\overline{\mathrm{BERR}}$	100	I/O	A16



69 70 71
$\overline{\mathrm{BG}}$/$\overline{\mathrm{IPL1}}$ $\overline{\mathrm{BGACK}}$/$\overline{\mathrm{IPL2}}$ $\overline{\mathrm{BR}}$/$\overline{\mathrm{IPL0}}$
7 A23, 6 A22, 5 A21, 4 A20, 3 A19, 2 A18, 1 A17, 100 A16, 99 A15, 97 A14, 96 A13, 95 A12, 94 A11, 93 A10, 92 A9, 91 A8, 89 A7, 88 A6, 87 A5, 86 A4, 85 A3, 83 A2, 82 A1
D15 8, D14 9, D13 11, D12 12, D11 13, D10 15, D9 16, D8 17, D7 18, D6 19, D5 20, D4 21, D3 22, D2 23, D1 24, D0 25
IO15/$\overline{\mathrm{DTRO}}$ 36, IO14/$\overline{\mathrm{DSRO}}$ 37, IO13/$\overline{\mathrm{CTSO}}$ 38, IO12/FAULT 39, IO11/PRIME 40, IO10/$\overline{\mathrm{ACK}}$ 41, IO9/BUSY 42, IO8/$\overline{\mathrm{DSTB}}$ 43, IO7/DATA8 45, IO6/DATA7 46, IO5/DATA6 47, IO4/DATA5 48, IO3/DATA4 49, IO2/DATA3 50, IO1/DATA2 51, IO0/DATA1 52
59 $\overline{\mathrm{AS}}$, 60 $\overline{\mathrm{UDS}}$, 63 $\overline{\mathrm{LDS}}$, 64 R/$\overline{\mathrm{W}}$, 79 FC2, 80 FC1, 81 FC0
33 $\overline{\mathrm{RTSO}}$, 34 BCLK
30 RXD2, 31 RXD1, 32 RXD0
TXD2 26, TXD1 27, TXD0 28
56 INT2, 57 INT1, 58 INT0
$\overline{\mathrm{IACK2}}$ 53, $\overline{\mathrm{IACK1}}$ 54, $\overline{\mathrm{IACK0}}$ 55
68 TIN
TOUT2 66, TOUT1 67
72 $\overline{\mathrm{DTACK}}$, 75 $\overline{\mathrm{BERR}}$
$\overline{\mathrm{CS1}}$ 76, $\overline{\mathrm{CS0}}$ 77
$\overline{\mathrm{RESET}}$ $\overline{\mathrm{HALT}}$ NOR/$\overline{\mathrm{EMU}}$ CLK
74 73 78 65

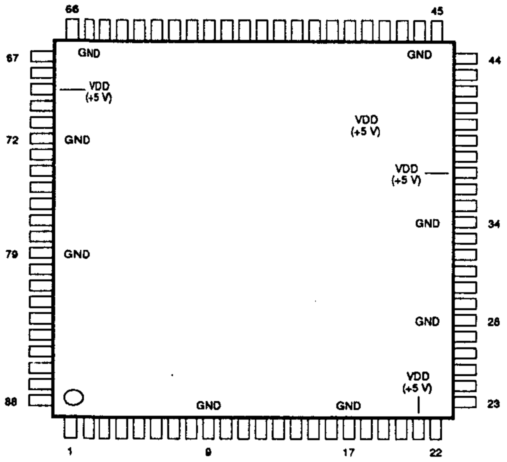
INPUT	
BCLK	; BAUD RATE CLOCK
$\overline{\mathrm{BERR}}$	; BUS ERROR
CLK	; CLOCK
$\overline{\mathrm{DTACK}}$	; DATA TRANSFER ACKNOWLEDGE
INT0-2	; INTERRUPT REQUESTS
NOR/$\overline{\mathrm{EMU}}$	; MODE SELECT
RXD0-2	; RECEIVE DATA
TIN	; TIMER INPUT
OUTPUT	
$\overline{\mathrm{BG}}$ (/$\overline{\mathrm{IPL1}}$)	; BUS GROUND
$\overline{\mathrm{CS0, 1}}$	; CHIP SELECTS
$\overline{\mathrm{IACK0\text{-}2}}$	; INTERRUPT ACKNOWLEDGE
TOUT1, 2	; TIMER OUTPUTS
TXD0-2	; TRANSFER DATA
INPUT/OUTPUT	
A1-23	; ADDRESS BUS
$\overline{\mathrm{ACK}}$	; I/O PORT
$\overline{\mathrm{AS}}$	; ADDRESS STROBE
$\overline{\mathrm{BGACK}}$ (/$\overline{\mathrm{IPL2}}$)	; BUS GROUND ACKNOWLEDGE
$\overline{\mathrm{BR}}$ (/$\overline{\mathrm{IPL0}}$)	; BUS REQUEST
BUSY	; I/O PORT
$\overline{\mathrm{CTSO}}$, $\overline{\mathrm{DSRO}}$, $\overline{\mathrm{DTRO}}$, $\overline{\mathrm{DSTB}}$	; I/O PORTS
D0-15	; DATA BUS
DATA1-8	; I/O PORTS
FAULT	; I/O PORT
FC0-2	; FUNCTION CORDS
$\overline{\mathrm{HALT}}$	; HALT
IO0-15	; I/O PORT
$\overline{\mathrm{LDS}}$	; LOWER DATA STROBE
PRIME	; I/O PORT
$\overline{\mathrm{RESET}}$	; RESET
$\overline{\mathrm{RTSO}}$	; TRANSFER REQUEST
R/$\overline{\mathrm{W}}$	; READ/WRITE
$\overline{\mathrm{UDS}}$	; UPPER DATA STROBE



INT0-2 56-58
$\overline{\mathrm{IACK0\text{-}2}}$ 53-55
RXD0-2 30-32
TXD0-2 26-28
$\overline{\mathrm{DTRO}}$, $\overline{\mathrm{CTSO}}$
$\overline{\mathrm{RTSO}}$, $\overline{\mathrm{DSRO}}$ 33,36-38
BCLK 34
$\overline{\mathrm{BR}}$ (/$\overline{\mathrm{IPL0}}$) 71
$\overline{\mathrm{BG}}$ (/$\overline{\mathrm{IPL1}}$) 69
$\overline{\mathrm{BGACK}}$ (/IPL 2) 70
INTERRUPT REQUEST RECEIVE CIRCUIT
PRIORITY DECISION CIRCUIT
INTERRUPT ACKNOWLEDGE CORRESPONDENCE CIRCUIT
IPL
UART
BAUD RATE GENERATOR
UART
BAUD RATE GENERATOR
UART
BAUD RATE GENERATOR
PRESCALER
INTERRUPT CONTROLLER
INTERRUPT REQUEST
SERIAL I/F
CORE PROCESSOR 68 HC 0001
INNER BUS
INTERFACE
INTERRUPT REQUEST
INTERRUPT REQUEST
ADDRESS DECODER
TIMER
PARALLEL I/F
DTACK BERR
WAIT CONTROL
TIME OUT SUPERVISION CIRCUIT
CS GENERATION CIRCUIT
PRESCALER
TIMER/COUNTER
TIMER/COUNTER
TIMER/COUNTER
16BIT BOARD
CENTORONICS CORRES PONDENCE CIRCUIT
A1-23 1-7 82,83 85-89 91-97 99,100
D0-15 8,9 11-13 15-25
$\overline{\mathrm{AS}}$ 59
$\overline{\mathrm{UDS}}$ 60
$\overline{\mathrm{LDS}}$ 63
R/$\overline{\mathrm{W}}$ 64
FC0-2 79-81
$\overline{\mathrm{RESET}}$ 74
$\overline{\mathrm{HALT}}$ 73
NOR/$\overline{\mathrm{EMU}}$ 78
CLK 65
76,77 $\overline{\mathrm{CS1}}$ $\overline{\mathrm{CS0}}$
72,75 $\overline{\mathrm{DTACK}}$ $\overline{\mathrm{BERR}}$
68 TIN
66,67 TOUT1,2
36-43, 45-52 IO0-15
GND 14, 29, 44, 62, 84, 98
VDD(+5V) 10, 35, 61, 90

UPC2372AGK (NEC)

– TOP VIEW –

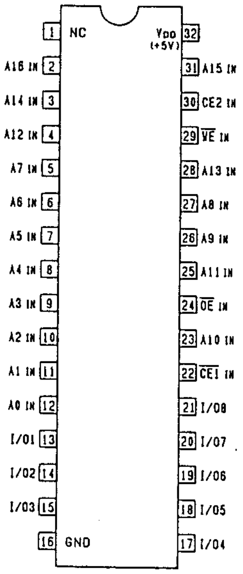

66
45
67
44
72
34
79
28
88
23
1
9
17
22
GND
VDD (+5 V)

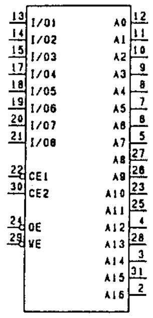
PIN No.	SIGNAL	PIN No.	SIGNAL	PIN No.	SIGNAL	PIN No.	SIGNAL
1	YL-IN	23	MTX-IN-YR	45	PROC-OUT-R	67	PROC-IN-G
2	BASE-CLIP	24	MTX-IN-R	46	GND-PROC-R	68	FB-AGC-B
3	FB-VCA-EDGE	25	PROC-OUT-B	47	WCLIP	69	VCC-1
4	AGC-MAX	26	FB-Knee-B	48	Knee	70	AGC-IN-B
5	VCA-EDGE	27	FB-r-B	49	FB-Knee-R	71	AGC-B
6	DLIN-1	28	GND-PROC-B	50		72	GND-AGC-G
7	DLIN-2	29	PED-B	51	FB-r-R	73	
8	DLOUT	30	Pre Knee-B	52	PED-R	74	AGC-OUT-B
9	GND-YESGE	31	FB-WB-B	53	Pre-Knee-R	75	PROC-IN-B
10	YEDGE-IN	32	WB-B	54	FB-WB-R	76	AGC-DET-OUT
11	YEDGE-OUT	33		55	WB-R	77	
12		34	GND-PROC-G	56		78	
13	MTX-IN-YEDGE	35		57	PROC-IN-R	79	GND-AGC-B
14	YL-OUT	36	PROC-OUT-G	58	AGC-OUT-R	80	
15	MTX-IN-YL	37	VCC-2	59	FB-AGC-R	81	AGC-STAT
16	BIAS	38	FB-Knee-G	60	AGC-R	82	AGC-DET-IN
17	GND-MTX	39	FB-r-G	61	AGC-IN-R	83	CP-IN-2
18	(B-Y)OUT	40	PED-G	62	FB-AGC-G	84	YENC-OUT
19	MTX-IN-YB	41	Pre-Knee-G	63	AGC-IN-G	85	YENC-IN
20	MTX-IN-B	42	FB-WB-G	64	AGC-G	86	YH-OUT
21	VCC-MTX	43	WB-G	65	GND-AGC-R	87	VREF
22	(R-Y)OUT	44	CP-IN-1	66	AGC-OUT-R	88	VCA-YH

UPD431000AGW-70L (NEC) FLAT PACKAGE

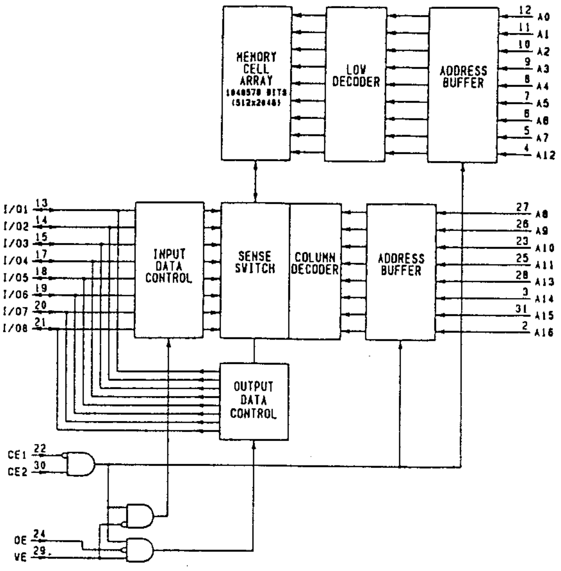
C-MOS 1M (128Kx8)-BIT STATIC RAM

– TOP VIEW –


1 NC
2 A16 IN
3 A14 IN
4 A12 IN
5 A7 IN
6 A6 IN
7 A5 IN
8 A4 IN
9 A3 IN
10 A2 IN
11 A1 IN
12 A0 IN
13 I/01
14 I/02
15 I/03
16 GND
17 I/04
18 I/05
19 I/06
20 I/07
21 I/08
22 CE1 IN
23 A10 IN
24 OE IN
25 A11 IN
26 A9 IN
27 A8 IN
28 A13 IN
29 WE IN
30 CE2 IN
31 A15 IN
32 VDD (+5V)


13 I/01
14 I/02
15 I/03
17 I/04
18 I/05
19 I/06
20 I/07
21 I/08
22 CE1
30 CE2
24 OE
29 WE
A0 12
A1 11
A2 10
A3 9
A4 8
A5 7
A6 6
A7 5
A8 27
A9 26
A10 23
A11 25
A12 4
A13 28
A14 3
A15 31
A16 2

A0–A16 :ADDRESS INPUTS
CE1, CE2 :CHIP ENABLE 1, 2 INPUTS
I/01–I/08 :DATA INPUTS/OUTPUTS
OE :OUTPUT ENABLE INPUT
WE :WRITE ENABLE INPUT


MEMORY CELL ARRAY
1048576 BITS (512x2048)
LOW DECODER
ADDRESS BUFFER
INPUT DATA CONTROL
SENSE SWITCH
COLUMN DECODER
ADDRESS BUFFER
OUTPUT DATA CONTROL
12 A0
11 A1
10 A2
9 A3
8 A4
7 A5
6 A6
5 A7
4 A12
27 A8
26 A9
23 A10
25 A11
28 A13
3 A14
31 A15
2 A16
I/01 13
I/02 14
I/03 15
I/04 17
I/05 18
I/06 19
I/07 20
I/08 21
CE1 22
CE2 30
OE 24
WE 29

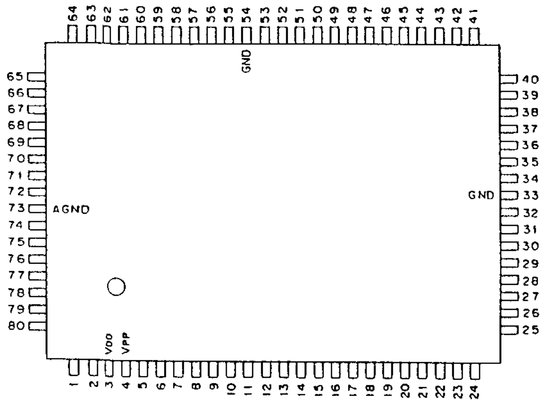
MODE :

CE1	CE2	OE	WE	MODE	DATA OUTPUT
1	X	X	X	NO SELECTION (POWER DOWN)	HI-Z
X	0	X	X		
0	1	1	1	OUTPUT DISABLE	
0	1	0	1	READ	D OUT
0	1	X	0	WRITE	D IN

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE
HI-Z: HIGH IMPEDANCE

UPD75P516GF (NEC)
UPD75P516GF-DKUZ-01

C-MOS 4-BIT MICROCOMPUTER
- TOP VIEW -

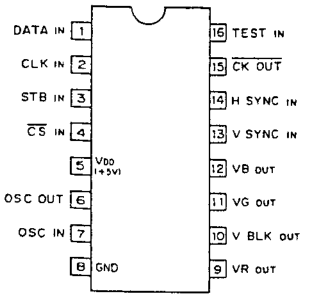

GND
AGND
GND
VDD
VPP
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64
65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

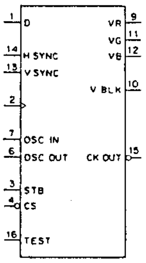
(V_{DD} = + 5V, V_{PP} = FOR PROGRAMMING)

PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	I	AN0	21	I/O	P73/KR7	41	I/O	P30/MD0	61	I/O	P143
2	I	A V_{REF}	22	I/O	P72/KR6	42	I/O	P23/BUZ	62	I/O	P142
3	–	V_{DD}	23	I/O	P71/KR5	43	I/O	P22/PCL	63	I/O	P141
4	–	V_{PP}	24	I/O	P70/KR4	44	I/O	P21	64	I/O	P140
5	I/O	P113	25	I/O	P63/KR3	45	I/O	P20/PO0	65	I/O	P133
6	I/O	P112	26	I/O	P62/KR2	46	I	P13/TI0	66	I/O	P132
7	I/O	P111	27	I/O	P61/KR1	47	I	P12/INT2	67	I/O	P131
8	I/O	P110	28	I/O	P60/KR0	48	I	P11/INT1	68	I/O	P130
9	I/O	P103	29	I/O	P53	49	I	P10/INT0	69	I/O	P123
10	I/O	P102	30	I/O	P52	50	I/O	PO3/SI0/SB1	70	I/O	P122
11	I/O	P101	31	I/O	P51	51	I/O	PO2/SO0/SB0	71	I/O	P121
12	I/O	P100	32	I/O	P50	52	I/O	PO1/$\overline{\text{SCK0}}$	72	I/O	P120
13	I/O	P93	33	–	GND	53	I	PO0/INT4	73	–	AGND
14	I/O	P92	34	I/O	P43	54	–	GND	74	I	P153/AN7
15	I/O	P91	35	I/O	P42	55	I	XT1	75	I	P152/AN6
16	I/O	P90	36	I/O	P41	56	–	XT2	76	I	P151/AN5
17	I	P83/SI1	37	I/O	P40	57	–	IC(GND)	77	I	P150/AN4
18	I/O	P82/SO1	38	I/O	P33/MD3	58	I	X1	78	I	AN3
19	I/O	P81/$\overline{\text{SCK1}}$	39	I/O	P32/MD2	59	I	X2	79	I	AN2
20	I/O	P80/PP0	40	I/O	P31/MD1	60	I	$\overline{\text{RESET}}$	80	I	AN1

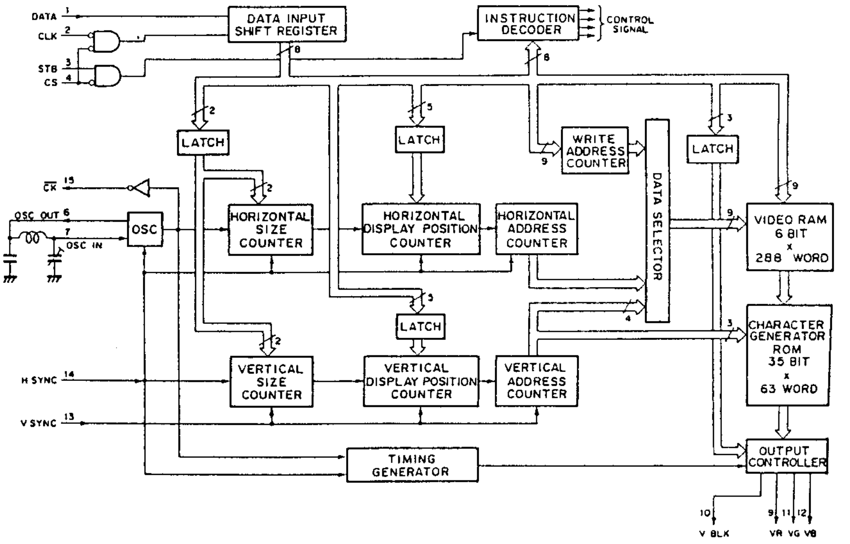
UPD6142G-101 (NEC) FLAT PACKAGE

C-MOS 8-BIT SERIALL INPUT CHARACTER DISPLAY
- TOP VIEW -


DATA IN 1
CLK IN 2
STB IN 3
$\overline{\text{CS}}$ IN 4
5 VDD (+5V)
OSC OUT 6
OSC IN 7
8 GND
16 TEST IN
15 $\overline{\text{CK}}$ OUT
14 H SYNC IN
13 V SYNC IN
12 VB OUT
11 VG OUT
10 V BLK OUT
9 VR OUT

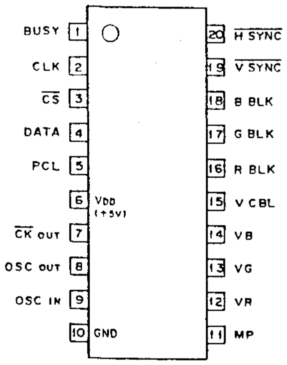

1 D
14 H SYNC
13 V SYNC
2
7 OSC IN
6 OSC OUT
3 STB
4 CS
16 TEST
VR 9
VG 11
VB 12
V BLK 10
CK OUT 15

D; DATA INPUT
CK OUT; EQUAL TO OUTPUT OF OSC OUT
CLK; CLOCK INPUT
CS; CHIP SELECT INPUT
H SYNC; H SYNC INPUT
OSC IN, OUT; EXTERNAL TERMINAL FOR OSC
STB; STROBE INPUT
TEST; TEST CLOCK INPUT
VB; BLUE CHARACTER DATA OUTPUT
V BLK; V BLANKING OUTPUT
VG; GREEN CHARACTER DATA OUTPUT
VR; RED CHARACTER DATA OUTPUT
V SYNC; V SYNC INPUT

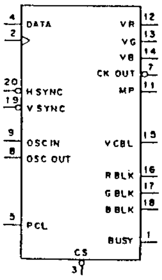

DATA 1
CLK 2
STB 3
CS 4
DATA INPUT SHIFT REGISTER
8
INSTRUCTION DECODER
CONTROL SIGNAL
8
2
LATCH
5
LATCH
WRITE ADDRESS COUNTER
9
DATA SELECTOR
3
LATCH
9
$\overline{\text{CK}}$ 15
OSC OUT 6
7 OSC IN
OSC
HORIZONTAL SIZE COUNTER
HORIZONTAL DISPLAY POSITION COUNTER
HORIZONTAL ADDRESS COUNTER
VIDEO RAM 6 BIT x 288 WORD
3
LATCH
2
4
VERTICAL SIZE COUNTER
VERTICAL DISPLAY POSITION COUNTER
VERTICAL ADDRESS COUNTER
CHARACTER GENERATOR ROM 35 BIT x 63 WORD
H SYNC 14
V SYNC 13
TIMING GENERATOR
OUTPUT CONTROLLER
10
V BLK
9 11 12
VR VG VB

UPD6453GT-610 (NEC) FLAT PACKAGE

C-MOS ON-SCREEN CHARACTER DISPLAY
- TOP VIEW -



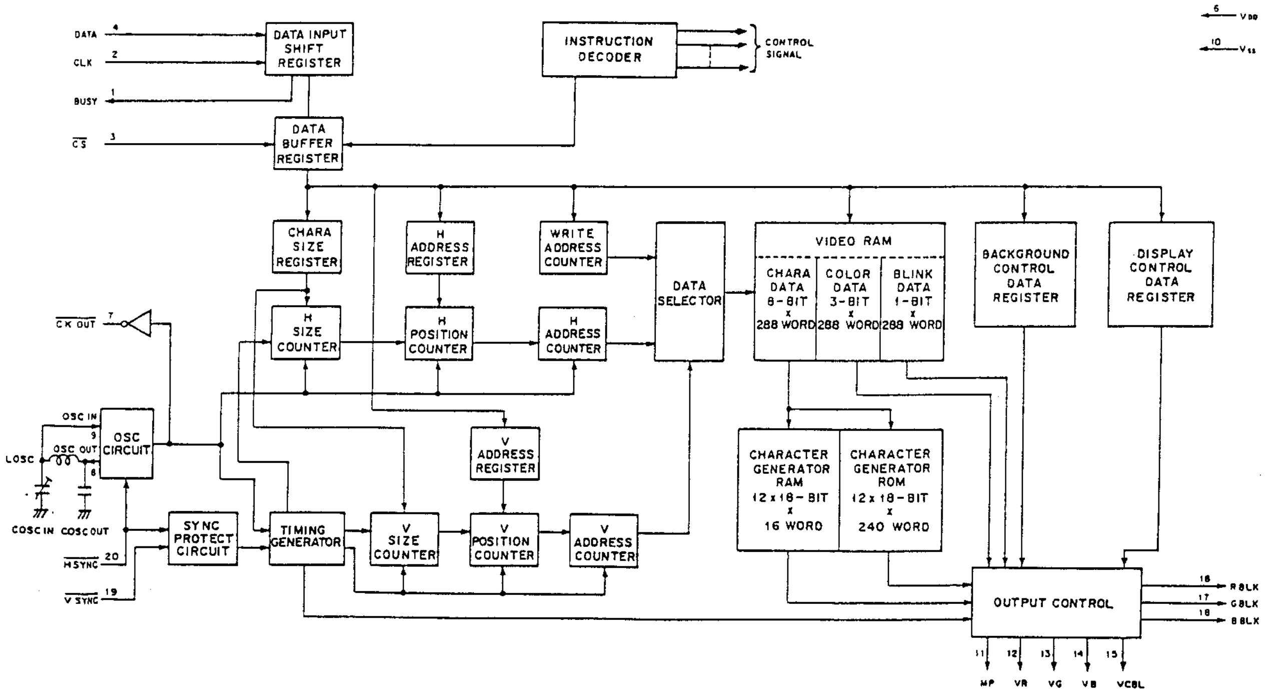
BUSY 1
CLK 2
$\overline{CS}$ 3
DATA 4
PCL 5
6 VDD (+5V)
$\overline{CK}$ OUT 7
OSC OUT 8
OSC IN 9
10 GND
20 $\overline{H\ SYNC}$
19 $\overline{V\ SYNC}$
18 B BLK
17 G BLK
16 R BLK
15 V CBL
14 VB
13 VG
12 VR
11 MP



4 DATA
2
20 H SYNC
19 V SYNC
9 OSC IN
8 OSC OUT
5 PCL
VR 12
VG 13
VB 14
CK OUT 7
MP 11
VCBL 15
R BLK 16
G BLK 17
B BLK 18
BUSY 1
CS 3

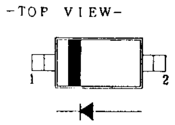
INPUT	
CLK	: CLOCK
$\overline{CS}$	: CHIP SELECT
DATA	: SERIAL DATA
$\overline{H\ SYNC}$	: HORIZONTAL SYNC
OSC IN	: OSCILLATOR IN
PCL	: POWER ON CLEAR
$\overline{V\ SYNC}$	: VERTICAL SYNC

OUTPUT	
B_{BLK}, R_{BLK}, G_{BLK}	: B, R, G, BLANKING
BUSY	: BUSY OUT
$\overline{CK}$ OUT	: CLOCK
MP	: MASK PULSE
OSC OUT	: OSCILLATOR OUT
V_R, V_G, V_B	: R, G, B, CHARACTER DATA
V_{CBL}	: VIDEO CUT BLANKING

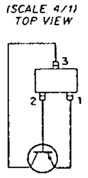


DATA 4
CLK 2
BUSY 1
$\overline{CS}$ 3
DATA INPUT SHIFT REGISTER
INSTRUCTION DECODER
CONTROL SIGNAL
6 VDD
10 VSS
DATA BUFFER REGISTER
CHARA SIZE REGISTER
H ADDRESS REGISTER
WRITE ADDRESS COUNTER
DATA SELECTOR
VIDEO RAM
CHARA DATA 8-BIT x 288 WORD
COLOR DATA 3-BIT x 288 WORD
BLINK DATA 1-BIT x 288 WORD
BACKGROUND CONTROL DATA REGISTER
DISPLAY CONTROL DATA REGISTER
$\overline{CK\ OUT}$ 7
H SIZE COUNTER
H POSITION COUNTER
H ADDRESS COUNTER
OSC IN 9
OSC OUT 8
6
LOSC
COSC IN
COSC OUT
OSC CIRCUIT
V ADDRESS REGISTER
CHARACTER GENERATOR RAM 12 x 18-BIT x 16 WORD
CHARACTER GENERATOR ROM 12 x 18-BIT x 240 WORD
$\overline{H SYNC}$ 20
$\overline{V SYNC}$ 19
SYNC PROTECT CIRCUIT
TIMING GENERATOR
V SIZE COUNTER
V POSITION COUNTER
V ADDRESS COUNTER
OUTPUT CONTROL
16 RBLK
17 GBLK
18 BBLK
11 MP
12 VR
13 VG
14 VB
15 VCBL

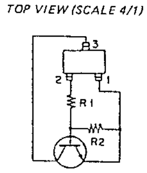
02DZ20



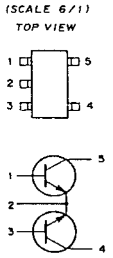
2SA1162G
2SA1226
2SA1576
2SA1611


(SCALE 4/1)
TOP VIEW
3
2
1

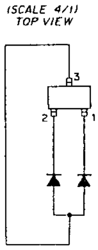
DTC144EK (R1 = 47K, R2 = 47K)
DTC144EU (R1 = 47K, R2 = 47K)


TOP VIEW (SCALE 4/1)
3
2
1
R1
R2

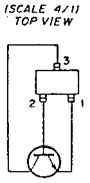
XP1501


(SCALE 6/1)
TOP VIEW
1
2
3
5
4
1
5
2
3
4

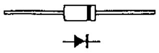
1SS181
1SS303


(SCALE 4/1)
TOP VIEW
3
2
1

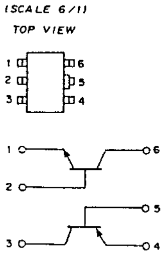
2SC1623
2SC2714
2SC4103
2SC4177


(SCALE 4/1)
TOP VIEW
3
2
1

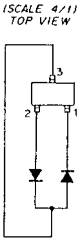
ERA83-006



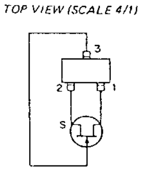
XP4601


(SCALE 6/1)
TOP VIEW
1
2
3
6
5
4
1
6
2
5
3
4

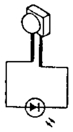
1SS226


(SCALE 4/1)
TOP VIEW
3
2
1

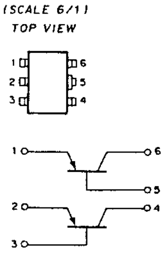
2SK852
2SK94


TOP VIEW (SCALE 4/1)
3
2
1
S

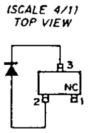
LN45YP ; AMBER



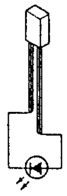
XP6401


(SCALE 6/1)
TOP VIEW
1
2
3
6
5
4
1
6
5
2
4
3

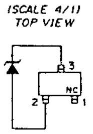
1SS294


(SCALE 4/1)
TOP VIEW
3
NC
2
1

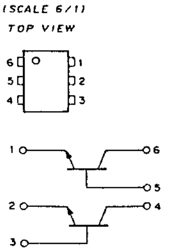
BG5531K ; GREEN



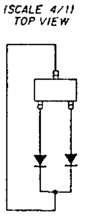
RD ? ? M-B ?


(SCALE 4/1)
TOP VIEW
3
NC
2
1

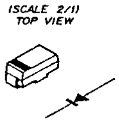
XP6501


(SCALE 6/1)
TOP VIEW
6
5
4
1
2
3
1
6
5
2
4
3

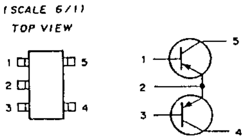
1SS304
MA152WK


(SCALE 4/1)
TOP VIEW

D2FL20


(SCALE 2/1)
TOP VIEW

XP1401


(SCALE 6/1)
TOP VIEW
1
2
3
5
4
1
5
2
3
4

SECTION 5
EXPLODED VIEWS

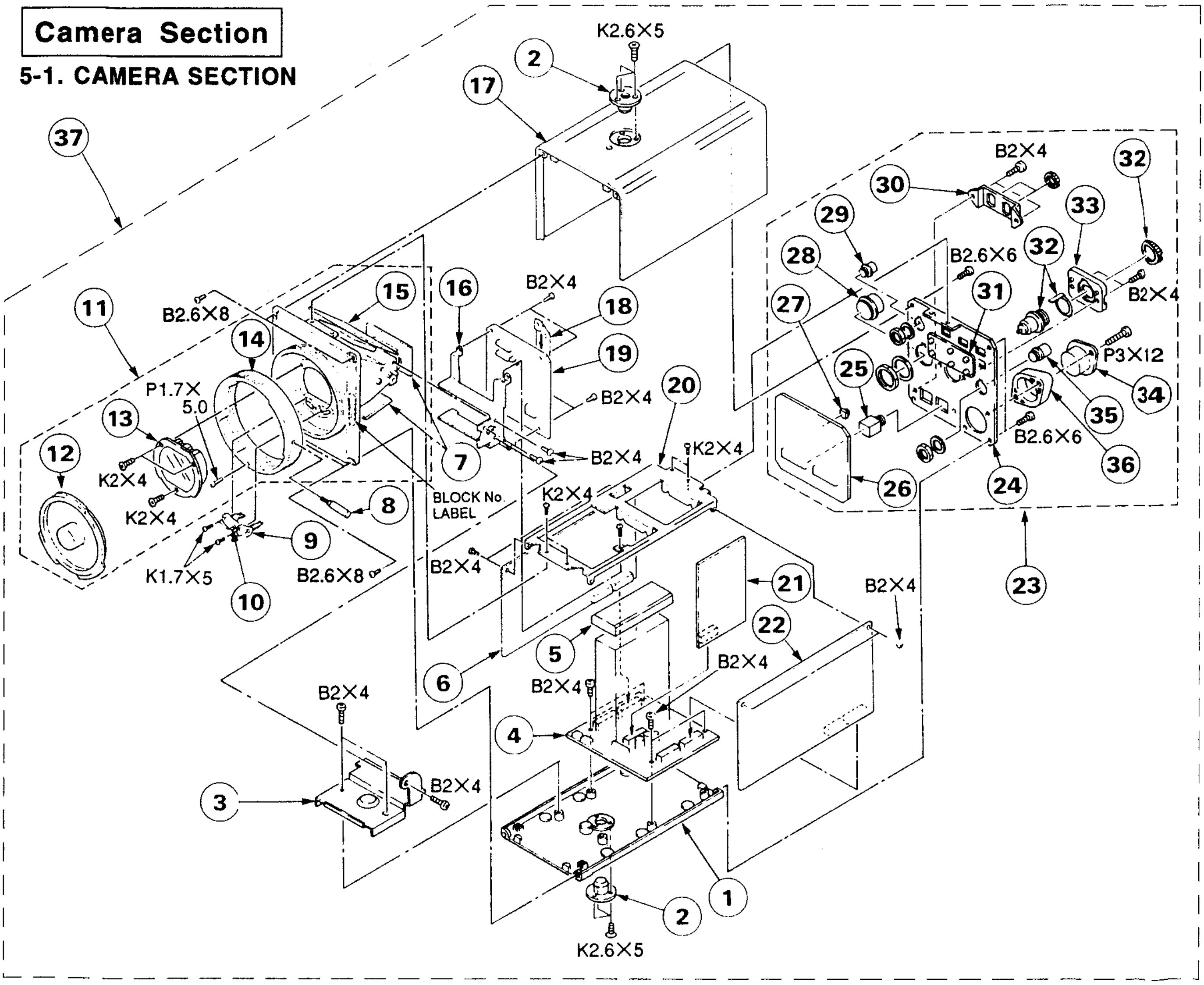
NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked because they are seldom required for routine servicing. Some delay should be expected when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Camera Section

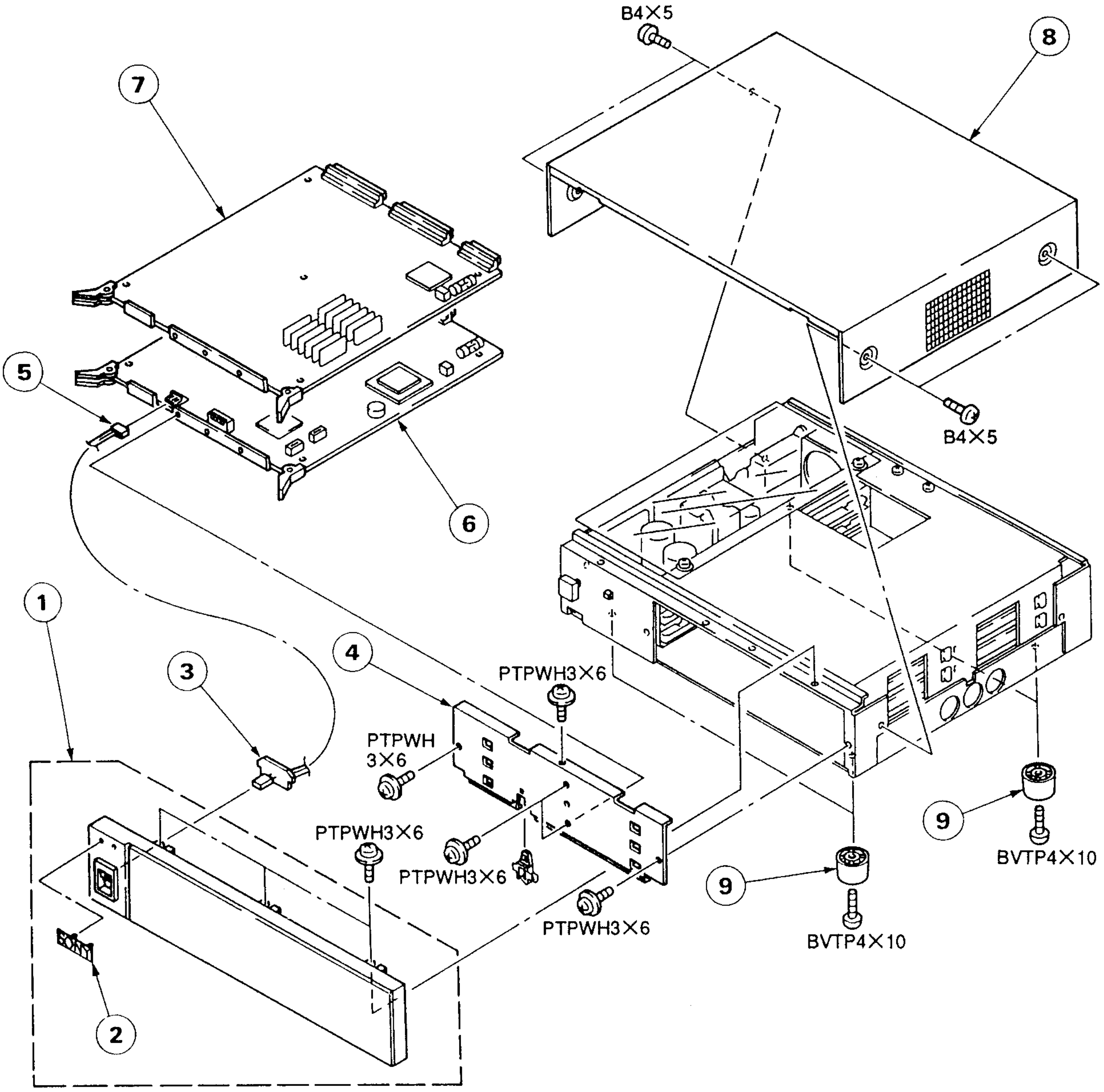
5-1. CAMERA SECTION


K2.6X5
2
17
37
B2X4
30
32
33
29
28
B2.6X6
32
B2X4
31
27
P3X12
25
34
35
B2.6X6
36
24
26
23
11
B2.6X8
15
16
B2X4
18
19
14
P1.7X
5.0
B2X4
20
K2X4
13
12
K2X4
K2X4
B2X4
7
BLOCK No.
LABEL
K2X4
8
9
K1.7X5
B2.6X8
10
B2X4
21
B2X4
22
5
B2X4
6
B2X4
B2X4
4
3
B2X4
1
2
K2.6X5

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
1	3-174-677-31	CASE, LOWER		20	*3-174-673-02	STAY	
2	3-174-664-02	SCREW, TRIPOD		21	*A-8275-616-A	SG-215 BOARD, COMPLETE	
3	*3-176-677-01	PLATE, SHIELD		22	*A-8275-618-A	PR-188 BOARD, COMPLETE	
4	*A-8275-615-A	MB-507 BOARD, COMPLETE		23	A-8310-122-A	PANEL ASSY (PC), REAR	
5	3-174-670-01	RUBBER, HEAT ELECTRI		24	*3-184-138-01	PANEL, REAR	
6	*A-8275-617-A	AT-83 BOARD, COMPLETE		25	1-764-849-11	JACK	
7	*A-8271-136-A	PA-133 BOARD, COMPLETE		26	*A-8275-619-A	CN-909 BOARD, COMPLETE	
8				27	1-571-787-11	SWITCH, TACTILE	
9	*1-949-642-11	HARNESS (ZOOM)		28	1-691-629-11	CONNECTOR (ROUND TYPE) 20P	
10	*1-949-643-11	HARNESS (IRIS)		29	1-562-222-21	RECEPTACLE, CONNECTOR 6P	
11	A-8310-120-A	BLOCK ASSY, CCD		30	3-184-117-01	REINFORCEMENTC	
12	3-699-144-02	CAP, MOUNT		31	*3-174-672-01	SHEET, REAR	
13	*1-547-463-11	FILTER UNIT, OPTICAL		32	1-540-256-21	SOCKET, SYNCHRONIZE	
14	*3-174-668-01	RING, MOUNT		33	3-184-116-01	INSULATOR, SOCKET	
15	*A-8271-138-A	PA-134 BOARD, COMPLETE		34	1-561-284-21	SOCKET, DIN 8P	
16	3-174-669-02	BRACKET, TG		35	1-563-929-11	CONNECTOR, ROUND TYPE (RF) 4P	
17	3-174-676-32	CASE, UPPER		36	3-184-118-01	SPACER, DIN	
18	*X-3166-548-2	SPRING ASSY, TG RADIATION		37	*A-8263-039-A	CAMERA OVERALL ASSY	
19	*A-8275-614-A	TG-133 BOARD, COMPLETE					

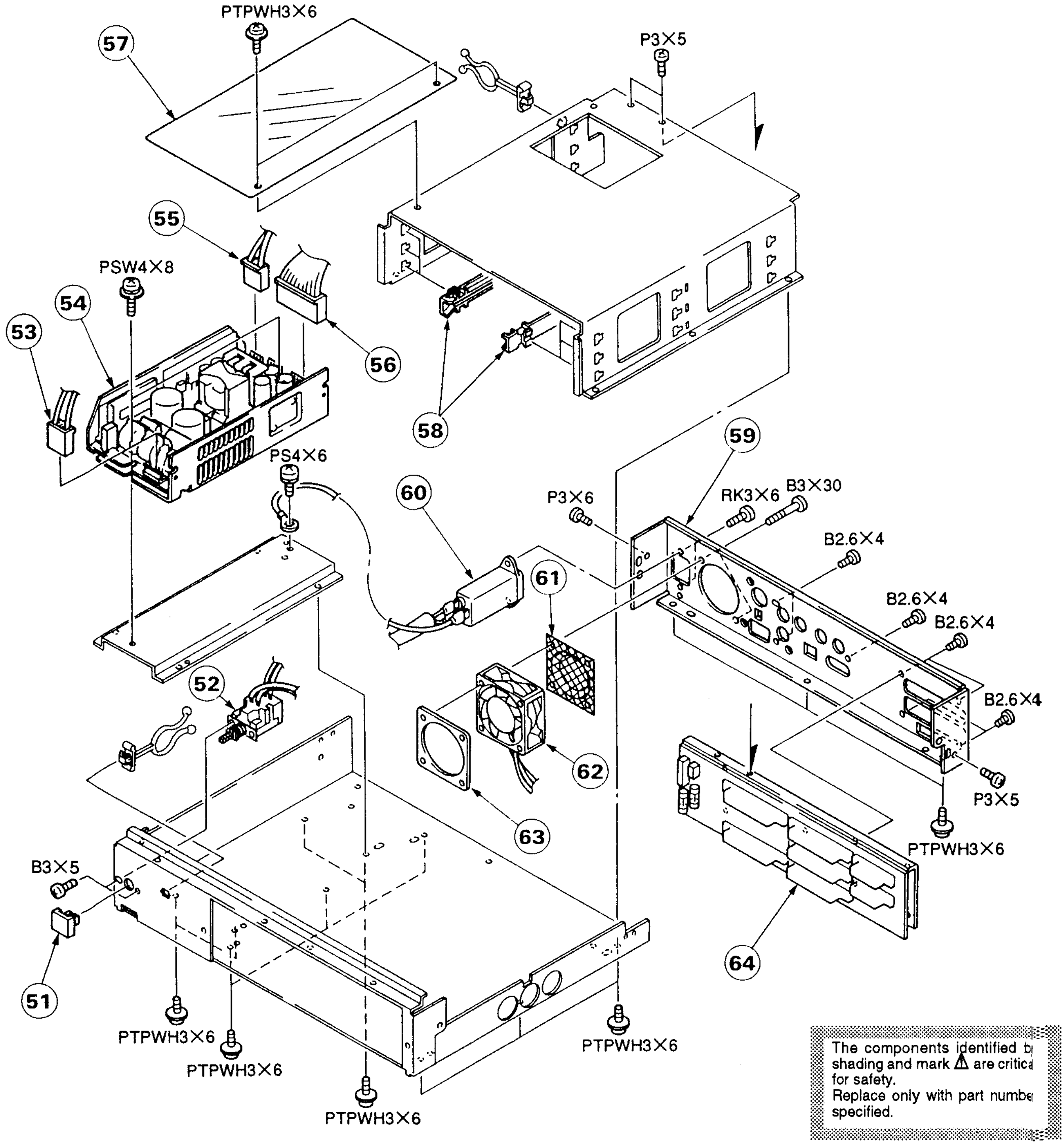
Processor Section

5-2. CABINET ASSEMBLY


B4×5
8
7
5
6
B4×5
1
3
4
PTPWH3×6
PTPWH
3×6
PTPWH3×6
PTPWH3×6
PTPWH3×6
9
9
BVTP4×10
BVTP4×10
SONY
2

Ref.No	Part No.	Description	Remark
1	*X-3167-419-2	PANEL ASSY, FRONT	
2	3-718-322-02	EMBLEM, SONY	
3	*1-620-916-11	PE-18 BOARD	
4	*3-184-134-02	PLATE, FRONT	
5	1-944-580-14	HARNESS (LED ASSY)	
6	*A-8275-622-A	SY-194 BOARD, COMPLETE	
7	*A-8275-621-A	ADA-33 BOARD, COMPLETE	
8	*X-3167-424-1	CASE ASSY	
9	X-3316-715-1	FOOT ASSY	

5-3. CHASSIS BLOCK ASSEMBLY AND SWITCHING REGULATOR



PTPWH3X6
(57)
P3X5
(55)
PSW4X8
(54)
(53)
(56)
(58)
(59)
PS4X6
(60)
P3X6
RK3X6
B3X30
B2.6X4
(61)
B2.6X4
B2.6X4
(52)
B2.6X4
(62)
P3X5
(63)
PTPWH3X6
B3X5
(64)
(51)
PTPWH3X6
PTPWH3X6
PTPWH3X6
PTPWH3X6

The components identified b shading and mark ⚠ are critica for safety.
Replace only with part numbe specified.

Ref.No	Part No.	Description	Remark
51	3-715-610-01	KNOB, PS	
52	⚠1-570-052-12	SWITCH, PUSH (AC POWER)	
53	*1-953-184-12	HARNESS, SUB (AC)	
54	⚠1-413-466-12	REGULATOR, SWITCHING	
55	*1-953-183-12	HARNESS, SUB (DC2)	
56	*1-953-182-12	HARNESS, SUB (DC1)	
57	*3-184-125-01	COVER, REGULATOR	
58	*3-178-164-01	RAIL (290), PC BOARD GUIDE	
59	*3-184-137-02	PANEL, REAR	
60	⚠1-526-813-22	INLET 3P, AC	
61	*3-675-898-00	PLATE, VENTILATION	
62	1-541-891-11	MOTOR, DC FAN (WITH FG)	
63	*3-745-710-01	PLATE, FIXED, FAN	
64	*A-8275-620-A	CN-919 BOARD, COMPLETE	

SECTION 6
ELECTRICAL PARTS LIST

PA-133 PA-134 TG-133

NOTE:

- Items marked " * " are not stocked because they are seldom required for routine servicing. Some delay should be expected when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise stated.

RESISTORS
- All resistors are in ohms.
- F:non-flammable

When indicating part by reference number, please include the board name.

CAPACITORS
- MF: µF, PF: µµF

COILS
- MMH: mH, UH: µH

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No	Part No.	Description			Remark
	*A-8271-136-A	PA-133 BOARD, COMPLETE			
		**********************			
		<CAPACITOR>			
C2	1-162-970-11	CERAMIC	0.01uF	10%	25V
C3	1-162-970-11	CERAMIC	0.01uF	10%	25V
C4	1-135-162-21	TANTAL	33uF	20%	6.3V
C5	1-135-154-21	TANTAL	3.3uF	20%	20V
C6	1-162-970-11	CERAMIC	0.01uF	10%	25V
C7	1-135-180-21	TANTAL	3.3uF	20%	6.3V
C8	1-162-970-11	CERAMIC	0.01uF	10%	25V
C9	1-135-154-21	TANTAL	3.3uF	20%	20V
C10	1-135-159-21	TANTAL	10uF	20%	20V
C11	1-135-157-21	TANTAL	10uF	20%	6.3V
C12	1-164-156-11	CERAMIC	0.1uF		25V
C13	1-135-167-21	TANTAL	68uF	20%	6.3V
C14	1-135-159-21	TANTAL	10uF	20%	20V
C15	1-135-159-21	TANTAL	10uF	20%	20V
C16	1-135-159-21	TANTAL	10uF	20%	20V
		<IC>			
IC2	8-759-031-84	IC SC7S04F			
IC3	8-759-031-84	IC SC7S04F			
IC4	8-752-068-23	IC CXA1439M-TH			
		<INDUCTOR>			
L1	1-412-032-11	INDUCTOR CHIP 100UH			
L2	1-412-029-11	INDUCTOR CHIP 10UH			
		<TRANSISTOR>			
Q1	8-729-905-24	TRANSISTOR 2SA1576-S			
Q2	8-729-926-19	TRANSISTOR 2SC4103-Q			
		<RESISTOR>			
R1	1-216-822-11	METAL	1.2K	5%	1/16W
R2	1-216-835-11	METAL	15K	5%	1/16W
R3	1-216-838-11	METAL	27K	5%	1/16W
R4	1-216-848-11	METAL	180K	5%	1/16W
R5	1-216-830-11	METAL	5.6K	5%	1/16W
R8	1-216-864-11	METAL	0	5%	1/16W
R9	1-216-864-11	METAL	0	5%	1/16W
**					
	*A-8271-138-A	PA-134 BOARD, COMPLETE			
		**********************			
		<CAPACITOR>			
C2	1-162-970-11	CERAMIC	0.01uF	10%	25V
C3	1-162-970-11	CERAMIC	0.01uF	10%	25V
C4	1-135-162-21	TANTAL	33uF	20%	6.3V
C5	1-135-154-21	TANTAL	3.3uF	20%	20V
C6	1-162-970-11	CERAMIC	0.01uF	10%	25V
C7	1-135-180-21	TANTAL	3.3uF	20%	6.3V
C8	1-162-970-11	CERAMIC	0.01uF	10%	25V
C9	1-135-154-21	TANTAL	3.3uF	20%	20V
C10	1-135-159-21	TANTAL	10uF	20%	20V
C11	1-135-157-21	TANTAL	10uF	20%	6.3V
C12	1-164-156-11	CERAMIC	0.1uF		25V
C13	1-135-167-21	TANTAL	68uF	20%	6.3V
C14	1-135-164-21	TANTAL	22uF	20%	20V
C15	1-135-164-21	TANTAL	22uF	20%	20V
		<IC>			
IC2	8-759-031-84	IC SC7S04F			
IC3	8-752-068-23	IC CXA1439M-TH			
IC4	8-759-031-84	IC SC7S04F			
		<INDUCTOR>			
L1	1-412-032-11	INDUCTOR CHIP 100UH			
L2	1-412-029-11	INDUCTOR CHIP 10UH			
		<TRANSISTOR>			
Q1	8-729-905-24	TRANSISTOR 2SA1576-S			
Q2	8-729-926-19	TRANSISTOR 2SC4103-Q			
		<RESISTOR>			
R1	1-216-822-11	METAL	1.2K	5%	1/16W
R2	1-216-835-11	METAL	15K	5%	1/16W
R3	1-216-838-11	METAL	27K	5%	1/16W
R4	1-216-848-11	METAL	180K	5%	1/16W
R5	1-216-830-11	METAL	5.6K	5%	1/16W
R8	1-216-864-11	METAL	0	5%	1/16W
R9	1-216-864-11	METAL	0	5%	1/16W
**					
	*A-8275-614-A	TG-133 BOARD, COMPLETE			
		**********************			
		<CAPACITOR>			
C1	1-135-157-21	TANTAL	10uF	20%	6.3V
C2	1-164-156-11	CERAMIC	0.1uF		25V
C3	1-162-919-11	CERAMIC	22PF	5%	50V
C4	1-162-970-11	CERAMIC	0.01uF	10%	25V
C5	1-162-919-11	CERAMIC	22PF	5%	50V
C6	1-135-157-21	TANTAL	10uF	20%	6.3V
C7	1-164-156-11	CERAMIC	0.1uF		25V
C8	1-164-156-11	CERAMIC	0.1uF		25V
C9	1-135-180-21	TANTAL	3.3uF	20%	6.3V
C10	1-164-156-11	CERAMIC	0.1uF		25V
C11	1-164-156-11	CERAMIC	0.1uF		25V
C12	1-135-180-21	TANTAL	3.3uF	20%	6.3V
C13	1-164-156-11	CERAMIC	0.1uF		25V
C14	1-164-156-11	CERAMIC	0.1uF		25V
C15	1-135-157-21	TANTAL	10uF	20%	6.3V

TG-133

Ref.No	Part No.	Description			Remark
C16	1-135-157-21	TANTAL	10uF	20%	6.3V
C17	1-164-156-11	CERAMIC	0.1uF		25V
C18	1-164-156-11	CERAMIC	0.1uF		25V
C19	1-135-180-21	TANTAL	3.3uF	20%	6.3V
C20	1-164-156-11	CERAMIC	0.1uF		25V
C21	1-135-157-21	TANTAL	10uF	20%	6.3V
C22	1-135-214-21	TANTAL	4.7uF	20%	20V
C23	1-126-601-11	ELECT	2.2uF	20%	50V
C24	1-164-005-11	CERAMIC	0.47uF		25V
C25	1-126-601-11	ELECT	2.2uF	20%	50V
C26	1-164-156-11	CERAMIC	0.1uF		25V
C27	1-126-603-11	ELECT	4.7uF	20%	35V
C28	1-135-157-21	TANTAL	10uF	20%	6.3V
C29	1-135-214-21	TANTAL	4.7uF	20%	20V
C30	1-126-601-11	ELECT	2.2uF	20%	50V
C31	1-164-005-11	CERAMIC	0.47uF		25V
C32	1-126-601-11	ELECT	2.2uF	20%	50V
C33	1-164-156-11	CERAMIC	0.1uF		25V
C34	1-126-603-11	ELECT	4.7uF	20%	35V
C35	1-135-157-21	TANTAL	10uF	20%	6.3V
C36	1-135-214-21	TANTAL	4.7uF	20%	20V
C37	1-126-601-11	ELECT	2.2uF	20%	50V
C38	1-164-005-11	CERAMIC	0.47uF		25V
C39	1-126-601-11	ELECT	2.2uF	20%	50V
C40	1-164-156-11	CERAMIC	0.1uF		25V
C41	1-126-603-11	ELECT	4.7uF	20%	35V
C42	1-135-210-11	TANTAL	4.7uF	20%	10V
C43	1-164-156-11	CERAMIC	0.1uF		25V
C44	1-162-921-11	CERAMIC	33PF	5%	50V
C45	1-135-157-21	TANTAL	10uF	20%	6.3V
C46	1-164-156-11	CERAMIC	0.1uF		25V
		<CONNECTOR>			
CN1	*1-691-630-21	CONNECTOR, FFC/FPC (ZIF) 20P			
CN2	*1-691-630-21	CONNECTOR, FFC/FPC (ZIF) 20P			
CN3	*1-691-630-21	CONNECTOR, FFC/FPC (ZIF) 20P			
		<DIODE>			
D1	8-719-820-05	DIODE 1SS181			
D2	8-719-800-76	DIODE 1SS226			
D3	8-719-820-05	DIODE 1SS181			
D4	8-719-820-05	DIODE 1SS181			
D5	8-719-800-76	DIODE 1SS226			
D6	8-719-820-05	DIODE 1SS181			
D7	8-719-820-05	DIODE 1SS181			
D8	8-719-800-76	DIODE 1SS226			
D9	8-719-820-05	DIODE 1SS181			
		<IC>			
IC1	8-752-351-03	IC CXD1256AR			
IC2	8-759-081-46	IC TC74VHCU04F			
IC3	8-752-327-48	IC CXD1250N			
IC4	8-752-327-48	IC CXD1250N			
IC5	8-752-327-48	IC CXD1250N			
IC6	8-759-081-46	IC TC74VHCU04F			
		<INDUCTOR>			
L1	1-412-031-11	INDUCTOR CHIP 47UH			
		<TRANSISTOR>			
Q1	8-729-429-98	TRANSISTOR XP1401			
Q2	8-729-429-98	TRANSISTOR XP1401			
Q3	8-729-117-16	TRANSISTOR 2SA1611-M6			
Q4	8-729-429-98	TRANSISTOR XP1401			
Q5	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q6	8-729-429-44	TRANSISTOR XP1501			
Q7	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q8	8-729-429-44	TRANSISTOR XP1501			
Q9	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q10	8-729-429-44	TRANSISTOR XP1501			
		<RESISTOR>			
R1	1-216-813-11	METAL	220	5%	1/16W
R2	1-216-821-11	METAL	1K	5%	1/16W
R3	1-216-813-11	METAL	220	5%	1/16W
R6	1-216-845-11	METAL	100K	5%	1/16W
R7	1-216-833-11	METAL	10K	5%	1/16W
R8	1-216-829-11	METAL	4.7K	5%	1/16W
R9	1-216-829-11	METAL	4.7K	5%	1/16W
R10	1-216-845-11	METAL	100K	5%	1/16W
R11	1-216-833-11	METAL	10K	5%	1/16W
R12	1-216-829-11	METAL	4.7K	5%	1/16W
R13	1-216-829-11	METAL	4.7K	5%	1/16W
R14	1-216-835-11	METAL	15K	5%	1/16W
R15	1-216-834-11	METAL	12K	5%	1/16W
R16	1-216-845-11	METAL	100K	5%	1/16W
R17	1-216-833-11	METAL	10K	5%	1/16W
R18	1-216-829-11	METAL	4.7K	5%	1/16W
R19	1-216-829-11	METAL	4.7K	5%	1/16W
R20	1-216-845-11	METAL	100K	5%	1/16W
R21	1-216-857-11	METAL	1M	5%	1/16W
R22	1-216-843-11	METAL	68K	5%	1/16W
R23	1-216-835-11	METAL	15K	5%	1/16W
R24	1-216-850-11	METAL	270K	5%	1/16W
R25	1-216-833-11	METAL	10K	5%	1/16W
R26	1-216-837-11	METAL	22K	5%	1/16W
R27	1-216-845-11	METAL	100K	5%	1/16W
R28	1-216-857-11	METAL	1M	5%	1/16W
R29	1-216-843-11	METAL	68K	5%	1/16W
R30	1-216-835-11	METAL	15K	5%	1/16W
R31	1-216-850-11	METAL	270K	5%	1/16W
R32	1-216-833-11	METAL	10K	5%	1/16W
R33	1-216-837-11	METAL	22K	5%	1/16W
R34	1-216-845-11	METAL	100K	5%	1/16W
R35	1-216-857-11	METAL	1M	5%	1/16W
R36	1-216-843-11	METAL	68K	5%	1/16W
R37	1-216-835-11	METAL	15K	5%	1/16W
R38	1-216-850-11	METAL	270K	5%	1/16W
R39	1-216-833-11	METAL	10K	5%	1/16W
R40	1-216-837-11	METAL	22K	5%	1/16W
R41	1-216-809-11	METAL	100	5%	1/16W
		<VARIABLE RESISTOR>			
RV1	1-238-857-11	RES, ADJ, CERMET 22K			
RV2	1-238-857-11	RES, ADJ, CERMET 22K			
RV3	1-238-857-11	RES, ADJ, CERMET 22K			
RV4	1-238-858-11	RES, ADJ, CERMET 47K			
RV5	1-238-858-11	RES, ADJ, CERMET 47K			
RV6	1-238-858-11	RES, ADJ, CERMET 47K			
		<CRYSTAL>			
X1	1-577-119-11	OSCILLATOR, CRYSTAL			

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MB-507 SG-215

Ref.No	Part No.	Description			Remark
	*A-8275-615-A	MB-507 BOARD, COMPLETE **********************			
		<CAPACITOR>			
C1	1-135-159-21	TANTAL	10uF	20%	20V
C2	1-135-160-21	TANTAL	15uF	20%	16V
C3	1-126-925-11	ELECT	470uF	20%	10V
C4	1-126-916-11	ELECT	1000uF	20%	6.3V
C5	1-162-966-11	CERAMIC	0.0022uF	10%	50V
C6	1-162-966-11	CERAMIC	0.0022uF	10%	50V
C7	1-135-159-21	TANTAL	10uF	20%	20V
C8	1-135-160-21	TANTAL	15uF	20%	16V
C9	1-126-935-11	ELECT	470uF	20%	16V
C10	1-162-919-11	CERAMIC	22PF	5%	50V
C11	1-162-919-11	CERAMIC	22PF	5%	50V
C12	1-162-919-11	CERAMIC	22PF	5%	50V
C13	1-162-919-11	CERAMIC	22PF	5%	50V
C14	1-162-919-11	CERAMIC	22PF	5%	50V
C15	1-135-159-21	TANTAL	10uF	20%	20V
C16	1-162-919-11	CERAMIC	22PF	5%	50V
C17	1-126-925-11	ELECT	470uF	20%	10V
C18	1-126-923-11	ELECT	220uF	20%	10V
		<CONNECTOR>			
CN1	*1-565-151-11	PIN, CONNECTOR (ANGLE) 4P			
CN2	*1-691-630-21	CONNECTOR, FFC/FPC (ZIF) 20P			
CN3	1-568-338-11	CONNECTOR, BOARD TO BOARD 24P			
CN4	1-568-338-11	CONNECTOR, BOARD TO BOARD 24P			
CN5	1-568-338-11	CONNECTOR, BOARD TO BOARD 24P			
CN8	1-568-338-11	CONNECTOR, BOARD TO BOARD 24P			
CN9	1-568-338-11	CONNECTOR, BOARD TO BOARD 24P			
CN10	1-690-670-12	CABLE, FLAT (1.0MM) 15P			
CN11	1-690-670-12	CABLE, FLAT (1.0MM) 15P			
CN12	*1-565-150-11	PIN, CONNECTOR (ANGLE) 3P			
		<DIODE>			
D1	8-719-017-33	DIODE 02DZ20-TPH3			
D2	8-719-820-05	DIODE 1SS181			
		<IC>			
IC1	8-759-009-10	IC MC14069UBF			
IC2	8-759-927-46	IC SN74HC00ANS			
		<INDUCTOR>			
L1	1-412-032-11	INDUCTOR CHIP 100UH			
L2	1-412-032-11	INDUCTOR CHIP 100UH			
L4	1-412-026-11	INDUCTOR CHIP 1UH			
L5	1-410-997-31	INDUCTOR CHIP 2.2UH			
L6	1-410-997-31	INDUCTOR CHIP 2.2UH			
L7	1-410-997-31	INDUCTOR CHIP 2.2UH			
L8	1-410-997-31	INDUCTOR CHIP 2.2UH			
L9	1-412-533-21	INDUCTOR 47UH			
		<CONVERTER>			
PU1	1-466-696-11	CONVERTER (DC-DC)			
		<RESISTOR>			
R1	1-216-833-11	METAL	10K	5%	1/16W
R2	1-216-833-11	METAL	10K	5%	1/16W
R3	1-216-804-11	METAL	39	5%	1/16W
R4	1-216-804-11	METAL	39	5%	1/16W
R5	1-216-804-11	METAL	39	5%	1/16W
R6	1-216-804-11	METAL	39	5%	1/16W
R9	1-216-049-00	METAL	1K	5%	1/10W
R10	1-216-049-00	METAL	1K	5%	1/10W
R11	1-216-049-00	METAL	1K	5%	1/10W
R12	1-216-049-00	METAL	1K	5%	1/10W
R13	1-216-037-00	METAL	330	5%	1/10W
R14	1-216-037-00	METAL	330	5%	1/10W
R15	1-216-037-00	METAL	330	5%	1/10W
R16	1-216-037-00	METAL	330	5%	1/10W
R17	1-216-037-00	METAL	330	5%	1/10W
R18	1-216-037-00	METAL	330	5%	1/10W
R19	1-216-037-00	METAL	330	5%	1/10W
R20	1-216-045-00	METAL	680	5%	1/10W
R21	1-216-045-00	METAL	680	5%	1/10W

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Ref.No	Part No.	Description			Remark
	*A-8275-616-A	SG-215 BOARD, COMPLETE **********************			
		<CAPACITOR>			
C1	1-135-166-21	TANTAL	47uF	20%	10V
C2	1-164-156-11	CERAMIC	0.1uF		25V
C3	1-162-923-11	CERAMIC	47PF	5%	50V
C4	1-162-923-11	CERAMIC	47PF	5%	50V
C5	1-162-923-11	CERAMIC	47PF	5%	50V
C6	1-162-923-11	CERAMIC	47PF	5%	50V
C7	1-162-923-11	CERAMIC	47PF	5%	50V
C8	1-162-970-11	CERAMIC	0.01uF	10%	25V
C9	1-164-156-11	CERAMIC	0.1uF		25V
C10	1-162-927-11	CERAMIC	100PF	5%	50V
C11	1-162-957-11	CERAMIC	220PF	5%	50V
C12	1-164-156-11	CERAMIC	0.1uF		25V
C13	1-162-957-11	CERAMIC	220PF	5%	50V
C14	1-135-162-21	TANTAL	33uF	20%	6.3V
C15	1-135-162-21	TANTAL	33uF	20%	6.3V
C16	1-162-927-11	CERAMIC	100PF	5%	50V
C17	1-135-217-21	TANTAL	15uF	20%	6.3V
		<CONNECTOR>			
CN1	1-569-607-11	CONNECTOR, BOARD TO BOARD 24P			
		<IC>			
IC1	8-752-332-67	IC CXD1217M			
IC2	8-759-239-34	IC TC74HC4538AF			
IC3	8-759-209-57	IC TC4S69F			
IC4	8-759-209-57	IC TC4S69F			
		<INDUCTOR>			
L1	1-412-030-11	INDUCTOR CHIP 22UH			
L2	1-412-030-11	INDUCTOR CHIP 22UH			
		<TRANSISTOR>			
Q1	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q2	8-729-117-16	TRANSISTOR 2SA1611-M6			
Q3	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q4	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q5	8-729-117-16	TRANSISTOR 2SA1611-M6			
		<RESISTOR>			
R1	1-216-817-11	METAL	470	5%	1/16W
R2	1-216-817-11	METAL	470	5%	1/16W
R3	1-216-817-11	METAL	470	5%	1/16W
R4	1-216-817-11	METAL	470	5%	1/16W
R5	1-216-864-11	METAL	0	5%	1/16W
R7	1-216-864-11	METAL	0	5%	1/16W
R8	1-216-817-11	METAL	470	5%	1/16W

Ref.No	Part No.	Description			Remark
R9	1-216-857-11	METAL	1M	5%	1/16W
R10	1-216-864-11	METAL	0	5%	1/16W
R11	1-218-710-11	METAL	5.6K	0.50%	1/16W
R12	1-218-727-11	METAL	30K	0.50%	1/16W
R13	1-218-716-11	METAL	10K	0.50%	1/16W
R14	1-216-841-11	METAL	47K	5%	1/16W
R15	1-216-834-11	METAL	12K	5%	1/16W
R16	1-216-829-11	METAL	4.7K	5%	1/16W
R17	1-216-825-11	METAL	2.2K	5%	1/16W
R18	1-216-837-11	METAL	22K	5%	1/16W
R19	1-216-825-11	METAL	2.2K	5%	1/16W
R20	1-216-825-11	METAL	2.2K	5%	1/16W
R21	1-216-789-11	METAL	2.2	5%	1/16W
R22	1-216-789-11	METAL	2.2	5%	1/16W
R23	1-216-864-11	METAL	0	5%	1/16W
R24	1-216-864-11	METAL	0	5%	1/16W

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*A-8275-617-A AT-83 BOARD, COMPLETE
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<CAPACITOR>

Ref.No	Part No.	Description			Remark
C3	1-135-179-21	TANTAL	2.2uF	20%	16V
C4	1-135-208-11	TANTAL	1uF	20%	10V
C6	1-135-208-11	TANTAL	1uF	20%	10V
C7	1-126-391-11	ELECT	47uF	20%	6.3V
C8	1-126-396-11	ELECT	47uF	20%	16V
C9	1-164-357-11	CERAMIC	1000PF	5%	50V
C10	1-135-208-11	TANTAL	1uF	20%	10V
C11	1-135-179-21	TANTAL	2.2uF	20%	16V
C12	1-135-210-11	TANTAL	4.7uF	20%	10V
C13	1-135-210-11	TANTAL	4.7uF	20%	10V
C14	1-164-357-11	CERAMIC	1000PF	5%	50V
C15	1-135-208-11	TANTAL	1uF	20%	10V
C16	1-135-208-11	TANTAL	1uF	20%	10V
C17	1-135-210-11	TANTAL	4.7uF	20%	10V
C18	1-135-210-11	TANTAL	4.7uF	20%	10V
C19	1-135-208-11	TANTAL	1uF	20%	10V
C20	1-135-210-11	TANTAL	4.7uF	20%	10V
C21	1-135-210-11	TANTAL	4.7uF	20%	10V
C22	1-164-357-11	CERAMIC	1000PF	5%	50V
C23	1-135-210-11	TANTAL	4.7uF	20%	10V
C24	1-135-210-11	TANTAL	4.7uF	20%	10V
C25	1-135-208-11	TANTAL	1uF	20%	10V
C26	1-164-357-11	CERAMIC	1000PF	5%	50V
C27	1-135-210-11	TANTAL	4.7uF	20%	10V
C28	1-135-217-21	TANTAL	15uF	20%	6.3V
C29	1-135-190-21	TANTAL	0.1uF	20%	20V
C31	1-126-391-11	ELECT	47uF	20%	6.3V
C32	1-135-208-11	TANTAL	1uF	20%	10V
C33	1-162-957-11	CERAMIC	220PF	5%	50V
C34	1-135-155-21	TANTAL	4.7uF	20%	16V
C35	1-135-166-21	TANTAL	47uF	20%	10V
C36	1-135-167-21	TANTAL	68uF	20%	6.3V
C37	1-135-208-11	TANTAL	1uF	20%	10V
C38	1-135-210-11	TANTAL	4.7uF	20%	10V
C39	1-164-156-11	CERAMIC	0.1uF		25V
C40	1-135-161-21	TANTAL	22uF	20%	6.3V
C41	1-135-161-21	TANTAL	22uF	20%	6.3V
C42	1-162-919-11	CERAMIC	22PF	5%	50V
C45	1-162-919-11	CERAMIC	22PF	5%	50V
C48	1-135-210-11	TANTAL	4.7uF	20%	10V
C49	1-164-357-11	CERAMIC	1000PF	5%	50V
C50	1-162-927-11	CERAMIC	100PF	5%	50V
C51	1-162-927-11	CERAMIC	100PF	5%	50V
C52	1-135-164-21	TANTAL	22uF	20%	16V
C53	1-135-179-21	TANTAL	2.2uF	20%	16V
C54	1-135-210-11	TANTAL	4.7uF	20%	10V
C57	1-164-156-11	CERAMIC	0.1uF		25V
C58	1-135-166-21	TANTAL	47uF	20%	10V
C59	1-164-156-11	CERAMIC	0.1uF		25V
C60	1-135-162-21	TANTAL	33uF	20%	6.3V
C62	1-135-210-11	TANTAL	4.7uF	20%	10V
C63	1-164-156-11	CERAMIC	0.1uF		25V
C64	1-162-919-11	CERAMIC	22PF	5%	50V
C65	1-162-919-11	CERAMIC	22PF	5%	50V
C66	1-164-357-11	CERAMIC	1000PF	5%	50V
C68	1-162-927-11	CERAMIC	100PF	5%	50V

<CONNECTOR>

CN1	1-569-607-11	CONNECTOR, BOARD TO BOARD 24P
CN2	1-569-607-11	CONNECTOR, BOARD TO BOARD 24P

<DIODE>

D2	8-719-800-76	DIODE 1SS226
D3	8-719-800-76	DIODE 1SS226
D4	8-719-123-82	DIODE 1SS303
D6	8-719-800-76	DIODE 1SS226
D7	8-719-105-91	DIODE RD5.6M-B2
D11	8-719-800-76	DIODE 1SS226
D12	8-719-105-91	DIODE RD5.6M-B2
D13	8-719-800-76	DIODE 1SS226
D14	8-719-800-76	DIODE 1SS226

<IC>

IC1	8-759-906-53	IC TL062CPS
IC2	8-759-300-71	IC HD14053BFP
IC3	8-759-242-64	IC TC4W53F
IC5	8-759-009-06	IC MC14052BF
IC7	8-759-906-53	IC TL062CPS
IC8	8-759-906-54	IC TL064CNS
IC9	8-759-013-86	IC MC74HC4066F
IC10	8-759-011-65	IC MC74HC4053F
IC11	8-759-908-92	IC TL084CNS
IC12	8-759-635-27	IC M62352GP
IC13	8-759-009-06	IC MC14052BF
IC14	8-759-009-05	IC MC14051BF
IC15	8-759-300-71	IC HD14053BFP
IC17	8-759-209-57	IC TC4S69F
IC18	8-759-209-97	IC TC4S81F
IC19	8-759-209-97	IC TC4S81F
IC20	8-759-259-22	IC CXP80P116Q-2-DKC-V1.00
IC21	8-759-052-64	IC M6M80011AFP
IC22	8-759-112-72	IC UPD6142G-101
IC23	8-759-635-27	IC M62352GP
IC24	8-759-906-53	IC TL062CPS
IC26	8-759-929-26	IC TL431CPS
IC27	8-759-989-91	IC TL7705ACPS
IC28	8-759-234-77	IC TC4S66F

<INDUCTOR>

L1	1-412-030-11	INDUCTOR CHIP 22UH
L3	1-412-030-11	INDUCTOR CHIP 22UH
L5	1-408-786-21	INDUCTOR CHIP 56UH
L6	1-412-030-11	INDUCTOR CHIP 22UH

<TRANSISTOR>

Q1	8-729-117-32	TRANSISTOR 2SC4177-L6

AT-83

Ref.No	Part No.	Description			Remark
Q2	8-729-427-83	TRANSISTOR XP6501			
Q3	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q4	8-729-427-80	TRANSISTOR XP6401			
Q5	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q6	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q7	8-729-427-83	TRANSISTOR XP6501			
Q8	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q9	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q10	8-729-427-83	TRANSISTOR XP6501			
Q11	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q12	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q13	8-729-427-83	TRANSISTOR XP6501			
Q14	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q15	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q16	8-729-117-16	TRANSISTOR 2SA1611-M6			
Q17	8-729-117-16	TRANSISTOR 2SA1611-M6			
Q18	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q19	8-729-926-19	TRANSISTOR 2SC4103-Q			
Q20	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q21	8-729-427-83	TRANSISTOR XP6501			
Q22	8-729-117-16	TRANSISTOR 2SA1611-M6			
Q23	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q24	8-729-117-16	TRANSISTOR 2SA1611-M6			
Q25	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q26	8-729-905-18	TRANSISTOR DTC144EU			
Q27	8-729-905-18	TRANSISTOR DTC144EU			
Q28	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q29	8-729-905-18	TRANSISTOR DTC144EU			
		<RESISTOR>			
R2	1-218-734-11	METAL	56K	0.50%	1/16W
R4	1-216-845-11	METAL	100K	5%	1/16W
R13	1-216-845-11	METAL	100K	5%	1/16W
R15	1-218-724-11	METAL	22K	0.50%	1/16W
R16	1-216-841-11	METAL	47K	5%	1/16W
R18	1-216-857-11	METAL	1M	5%	1/16W
R19	1-216-841-11	METAL	47K	5%	1/16W
R20	1-218-723-11	METAL	20K	0.50%	1/16W
R21	1-218-873-11	METAL	12K	0.50%	1/16W
R22	1-216-825-11	METAL	2.2K	5%	1/16W
R23	1-216-809-11	METAL	100	5%	1/16W
R24	1-216-833-11	METAL	10K	5%	1/16W
R25	1-218-714-11	METAL	8.2K	0.50%	1/16W
R26	1-216-830-11	METAL	5.6K	5%	1/16W
R27	1-216-833-11	METAL	10K	5%	1/16W
R29	1-216-821-11	METAL	1K	5%	1/16W
R30	1-218-716-11	METAL	10K	0.50%	1/16W
R32	1-216-825-11	METAL	2.2K	5%	1/16W
R33	1-216-821-11	METAL	1K	5%	1/16W
R34	1-216-813-11	METAL	220	5%	1/16W
R35	1-216-817-11	METAL	470	5%	1/16W
R37	1-216-830-11	METAL	5.6K	5%	1/16W
R38	1-216-833-11	METAL	10K	5%	1/16W
R39	1-218-714-11	METAL	8.2K	0.50%	1/16W
R40	1-216-829-11	METAL	4.7K	5%	1/16W
R41	1-216-833-11	METAL	10K	5%	1/16W
R42	1-216-821-11	METAL	1K	5%	1/16W
R44	1-216-833-11	METAL	10K	5%	1/16W
R45	1-216-864-11	METAL	0	5%	1/16W
R46	1-218-873-11	METAL	12K	0.50%	1/16W
R48	1-218-716-11	METAL	10K	0.50%	1/16W
R49	1-218-724-11	METAL	22K	0.50%	1/16W
R50	1-216-833-11	METAL	10K	5%	1/16W
R51	1-216-830-11	METAL	5.6K	5%	1/16W
R52	1-216-825-11	METAL	2.2K	5%	1/16W

Ref.No	Part No.	Description			Remark
R53	1-216-813-11	METAL	220	5%	1/16W
R54	1-216-833-11	METAL	10K	5%	1/16W
R55	1-218-873-11	METAL	12K	0.50%	1/16W
R57	1-216-821-11	METAL	1K	5%	1/16W
R58	1-216-829-11	METAL	4.7K	5%	1/16W
R59	1-216-833-11	METAL	10K	5%	1/16W
R60	1-218-724-11	METAL	22K	0.50%	1/16W
R61	1-216-833-11	METAL	10K	5%	1/16W
R62	1-218-714-11	METAL	8.2K	0.50%	1/16W
R63	1-216-833-11	METAL	10K	5%	1/16W
R65	1-216-833-11	METAL	10K	5%	1/16W
R66	1-216-830-11	METAL	5.6K	5%	1/16W
R67	1-216-821-11	METAL	1K	5%	1/16W
R68	1-216-833-11	METAL	10K	5%	1/16W
R69	1-218-716-11	METAL	10K	0.50%	1/16W
R70	1-216-829-11	METAL	4.7K	5%	1/16W
R71	1-216-813-11	METAL	220	5%	1/16W
R72	1-216-801-11	METAL	22	0.50%	1/16W
R74	1-216-825-11	METAL	2.2K	5%	1/16W
R75	1-218-873-11	METAL	12K	0.50%	1/16W
R76	1-216-841-11	METAL	47K	5%	1/16W
R77	1-216-821-11	METAL	1K	5%	1/16W
R78	1-218-725-11	METAL	24K	0.50%	1/16W
R79	1-216-821-11	METAL	1K	5%	1/16W
R80	1-216-833-11	METAL	10K	5%	1/16W
R82	1-216-821-11	METAL	1K	5%	1/16W
R84	1-216-845-11	METAL	100K	5%	1/16W
R85	1-216-845-11	METAL	100K	5%	1/16W
R86	1-216-837-11	METAL	22K	5%	1/16W
R87	1-216-829-11	METAL	4.7K	5%	1/16W
R88	1-216-827-11	METAL	3.3K	5%	1/16W
R90	1-216-833-11	METAL	10K	5%	1/16W
R92	1-218-740-11	METAL	100K	0.50%	1/16W
R93	1-216-841-11	METAL	47K	5%	1/16W
R94	1-216-841-11	METAL	47K	5%	1/16W
R95	1-216-832-11	METAL	8.2K	5%	1/16W
R96	1-216-833-11	METAL	10K	5%	1/16W
R97	1-216-832-11	METAL	8.2K	5%	1/16W
R98	1-216-829-11	METAL	4.7K	5%	1/16W
R99	1-216-853-11	METAL	470K	5%	1/16W
R100	1-216-833-11	METAL	10K	5%	1/16W
R101	1-216-845-11	METAL	100K	5%	1/16W
R102	1-216-841-11	METAL	47K	5%	1/16W
R103	1-216-829-11	METAL	4.7K	5%	1/16W
R104	1-216-827-11	METAL	3.3K	5%	1/16W
R105	1-216-827-11	METAL	3.3K	5%	1/16W
R106	1-216-829-11	METAL	4.7K	5%	1/16W
R107	1-216-830-11	METAL	5.6K	5%	1/16W
R108	1-216-809-11	METAL	100	5%	1/16W
R109	1-216-809-11	METAL	100	5%	1/16W
R110	1-216-833-11	METAL	10K	5%	1/16W
R116	1-216-836-11	METAL	18K	5%	1/16W
R117	1-216-842-11	METAL	56K	5%	1/16W
R118	1-216-834-11	METAL	12K	5%	1/16W
R119	1-216-838-11	METAL	27K	5%	1/16W
R120	1-216-833-11	METAL	10K	5%	1/16W
R122	1-216-836-11	METAL	18K	5%	1/16W
R123	1-216-841-11	METAL	47K	5%	1/16W
R124	1-216-834-11	METAL	12K	5%	1/16W
R125	1-216-842-11	METAL	56K	5%	1/16W
R126	1-216-821-11	METAL	1K	5%	1/16W
R127	1-216-833-11	METAL	10K	5%	1/16W
R128	1-216-833-11	METAL	10K	5%	1/16W
R129	1-216-838-11	METAL	27K	5%	1/16W
R130	1-216-809-11	METAL	100	5%	1/16W

Ref.No	Part No.	Description			Remark
R131	1-216-841-11	METAL	47K	5%	1/16W
R132	1-216-809-11	METAL	100	5%	1/16W
R133	1-216-809-11	METAL	100	5%	1/16W
R134	1-216-809-11	METAL	100	5%	1/16W
R135	1-216-809-11	METAL	100	5%	1/16W
R136	1-216-837-11	METAL	22K	5%	1/16W
R137	1-216-841-11	METAL	47K	5%	1/16W
R138	1-216-845-11	METAL	100K	5%	1/16W
R139	1-216-845-11	METAL	100K	5%	1/16W
R140	1-216-845-11	METAL	100K	5%	1/16W
R141	1-216-832-11	METAL	8.2K	5%	1/16W
R142	1-216-809-11	METAL	100	5%	1/16W
R143	1-216-830-11	METAL	5.6K	5%	1/16W
R147	1-216-845-11	METAL	100K	5%	1/16W
R148	1-216-829-11	METAL	4.7K	5%	1/16W
R149	1-216-829-11	METAL	4.7K	5%	1/16W
R153	1-216-833-11	METAL	10K	5%	1/16W
R154	1-216-864-11	METAL	0	5%	1/16W
R156	1-216-833-11	METAL	10K	5%	1/16W
R157	1-216-833-11	METAL	10K	5%	1/16W
R158	1-216-819-11	METAL	680	5%	1/16W
R159	1-216-833-11	METAL	10K	5%	1/16W
R160	1-216-833-11	METAL	10K	5%	1/16W
R161	1-216-833-11	METAL	10K	5%	1/16W
R162	1-216-817-11	METAL	470	5%	1/16W
R163	1-216-833-11	METAL	10K	5%	1/16W
R164	1-216-833-11	METAL	10K	5%	1/16W
R167	1-218-716-11	METAL	10K	0.50%	1/16W
R169	1-216-833-11	METAL	10K	5%	1/16W
R170	1-216-833-11	METAL	10K	5%	1/16W
R171	1-216-833-11	METAL	10K	5%	1/16W
R172	1-216-864-11	METAL	0	5%	1/16W
R175	1-216-864-11	METAL	0	5%	1/16W
R176	1-216-833-11	METAL	10K	5%	1/16W
R177	1-216-833-11	METAL	10K	5%	1/16W
R179	1-216-845-11	METAL	100K	5%	1/16W
R180	1-216-830-11	METAL	5.6K	5%	1/16W
R181	1-216-809-11	METAL	100	5%	1/16W
R182	1-216-813-11	METAL	220	5%	1/16W
R185	1-216-833-11	METAL	10K	5%	1/16W
R186	1-216-833-11	METAL	10K	5%	1/16W
R189	1-216-833-11	METAL	10K	5%	1/16W
R190	1-216-833-11	METAL	10K	5%	1/16W

<VARIABLE RESISTOR>

RV1	1-238-857-11	RES, ADJ, CERMET 22K

<SWITCH>

SW1	1-571-120-11	SWITCH, SLIDE

<CRYSTAL>

X1	1-577-133-21	VIBRATOR, CRYSTAL

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*A-8275-618-A PR-188 BOARD, COMPLETE

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<CAPACITOR>

Ref.No	Part No.	Description			Remark
C1	1-126-391-11	ELECT	47uF	20%	6.3V
C2	1-135-167-21	TANTAL	68uF	20%	6.3V
C3	1-126-396-11	ELECT	47uF	20%	16V
C4	1-135-162-21	TANTAL	33uF	20%	6.3V
C5	1-162-910-11	CERAMIC	5PF		50V
C6	1-135-091-91	TANTAL	1uF	20%	16V
C7	1-135-162-21	TANTAL	33uF	20%	6.3V
C8	1-162-910-11	CERAMIC	5PF		50V
C9	1-135-155-21	TANTAL	4.7uF	20%	16V
C10	1-135-091-91	TANTAL	1uF	20%	16V
C11	1-135-155-21	TANTAL	4.7uF	20%	16V
C12	1-135-162-21	TANTAL	33uF	20%	6.3V
C13	1-162-910-11	CERAMIC	5PF		50V
C14	1-135-091-91	TANTAL	1uF	20%	16V
C15	1-135-162-21	TANTAL	33uF	20%	6.3V
C16	1-135-091-91	TANTAL	1uF	20%	16V
C17	1-135-091-91	TANTAL	1uF	20%	16V
C18	1-135-091-91	TANTAL	1uF	20%	16V
C19	1-135-180-21	TANTAL	3.3uF	20%	6.3V
C20	1-135-091-91	TANTAL	1uF	20%	16V
C21	1-135-091-91	TANTAL	1uF	20%	16V
C22	1-135-091-91	TANTAL	1uF	20%	16V
C23	1-135-091-91	TANTAL	1uF	20%	16V
C24	1-135-091-91	TANTAL	1uF	20%	16V
C25	1-135-091-91	TANTAL	1uF	20%	16V
C26	1-135-180-21	TANTAL	3.3uF	20%	6.3V
C27	1-135-155-21	TANTAL	4.7uF	20%	16V
C28	1-162-964-11	CERAMIC	0.001uF	10%	50V
C29	1-135-091-91	TANTAL	1uF	20%	16V
C30	1-135-091-91	TANTAL	1uF	20%	16V
C31	1-135-091-91	TANTAL	1uF	20%	16V
C32	1-135-167-21	TANTAL	68uF	20%	6.3V
C33	1-135-091-91	TANTAL	1uF	20%	16V
C34	1-135-091-91	TANTAL	1uF	20%	16V
C35	1-135-091-91	TANTAL	1uF	20%	16V
C36	1-135-167-21	TANTAL	68uF	20%	6.3V
C37	1-135-091-91	TANTAL	1uF	20%	16V
C38	1-164-156-11	CERAMIC	0.1uF		25V
C39	1-135-167-21	TANTAL	68uF	20%	6.3V
C40	1-135-157-21	TANTAL	10uF	20%	6.3V
C42	1-135-091-91	TANTAL	1uF	20%	16V
C43	1-164-156-11	CERAMIC	0.1uF		25V
C44	1-164-156-11	CERAMIC	0.1uF		25V
C45	1-162-927-11	CERAMIC	100PF	5%	50V
C46	1-135-155-21	TANTAL	4.7uF	20%	16V
C47	1-135-177-21	TANTAL	1uF	20%	20V
C48	1-135-157-21	TANTAL	10uF	20%	6.3V
C49	1-164-156-11	CERAMIC	0.1uF		25V
C50	1-164-156-11	CERAMIC	0.1uF		25V
C51	1-162-964-11	CERAMIC	0.001uF	10%	50V
C52	1-135-159-21	TANTAL	10uF	20%	20V
C53	1-135-159-21	TANTAL	10uF	20%	20V
C54	1-135-177-21	TANTAL	1uF	20%	20V
C55	1-135-177-21	TANTAL	1uF	20%	20V
C56	1-135-177-21	TANTAL	1uF	20%	20V
C57	1-162-927-11	CERAMIC	100PF	5%	50V
C58	1-164-156-11	CERAMIC	0.1uF		25V
C59	1-164-156-11	CERAMIC	0.1uF		25V
C60	1-164-156-11	CERAMIC	0.1uF		25V
C61	1-135-155-21	TANTAL	4.7uF	20%	16V
C62	1-135-162-21	TANTAL	33uF	20%	6.3V
C63	1-135-162-21	TANTAL	33uF	20%	6.3V
C64	1-162-911-11	CERAMIC	6PF		50V
C65	1-162-916-11	CERAMIC	12PF	5%	50V
C66	1-162-927-11	CERAMIC	100PF	5%	50V
C67	1-164-156-11	CERAMIC	0.1uF		25V
C68	1-164-156-11	CERAMIC	0.1uF		25V
C69	1-164-156-11	CERAMIC	0.1uF		25V
C70	1-135-155-21	TANTAL	4.7uF	20%	16V
C71	1-135-162-21	TANTAL	33uF	20%	6.3V

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Ref.No	Part No.	Description			Remark
C72	1-162-908-11	CERAMIC	3PF		50V
C73	1-162-916-11	CERAMIC	12PF	5%	50V
C74	1-162-927-11	CERAMIC	100PF	5%	50V
C75	1-164-156-11	CERAMIC	0.1uF		25V
C76	1-164-156-11	CERAMIC	0.1uF		25V
C77	1-164-156-11	CERAMIC	0.1uF		25V
C78	1-135-091-91	TANTAL	1uF	20%	16V
C79	1-135-155-21	TANTAL	4.7uF	20%	16V
C80	1-135-162-21	TANTAL	33uF	20%	6.3V
C81	1-162-911-11	CERAMIC	6PF		50V
C82	1-162-916-11	CERAMIC	12PF	5%	50V
C83	1-162-927-11	CERAMIC	100PF	5%	50V
C84	1-162-949-11	CERAMIC	47PF	5%	50V
C85	1-162-915-11	CERAMIC	10PF		50V
C86	1-135-157-21	TANTAL	10uF	20%	6.3V
C87	1-164-156-11	CERAMIC	0.1uF		25V
C88	1-135-157-21	TANTAL	10uF	20%	6.3V
C95	1-135-157-21	TANTAL	10uF	20%	6.3V
C96	1-135-162-21	TANTAL	33uF	20%	6.3V
		<CONNECTOR>			
CN1	1-569-607-11	CONNECTOR, BOARD TO BOARD 24P			
CN2	1-569-607-11	CONNECTOR, BOARD TO BOARD 24P			
		<DIODE>			
D1	8-719-123-85	DIODE 1SS304			
D2	8-719-123-85	DIODE 1SS304			
		<FILTER>			
FL1	1-409-496-11	FILTER, LC TRAP			
FL2	1-409-496-11	FILTER, LC TRAP			
FL3	1-409-496-11	FILTER, LC TRAP			
		<IC>			
IC1	8-759-059-00	IC UPC2372AGK			
IC2	8-759-635-27	IC M62352GP			
IC3	8-759-635-27	IC M62352GP			
IC4	8-759-635-27	IC M62352GP			
IC5	8-759-234-77	IC TC4S66F			
IC6	8-759-234-77	IC TC4S66F			
IC7	8-759-209-57	IC TC4S69F			
IC8	8-759-234-77	IC TC4S66F			
IC9	8-759-300-71	IC HD14053BFP			
IC10	8-759-906-53	IC TL062CPS			
IC11	8-759-906-53	IC TL062CPS			
IC12	8-759-925-83	IC SN74HC27ANS			
IC13	8-759-926-37	IC SN74HC193ANS			
IC14	8-759-927-46	IC SN74HC00ANS			
IC15	8-759-906-53	IC TL062CPS			
		<INDUCTOR>			
L1	1-412-030-11	INDUCTOR CHIP 22UH			
L2	1-412-030-11	INDUCTOR CHIP 22UH			
L3	1-412-030-11	INDUCTOR CHIP 22UH			
L4	1-412-032-11	INDUCTOR CHIP 100UH			
L5	1-412-032-11	INDUCTOR CHIP 100UH			
L6	1-412-030-11	INDUCTOR CHIP 22UH			
L7	1-412-030-11	INDUCTOR CHIP 22UH			
L8	1-412-032-11	INDUCTOR CHIP 100UH			
L11	1-412-030-11	INDUCTOR CHIP 22UH			
		<TRANSISTOR>			
Q1	8-729-117-16	TRANSISTOR 2SA1611-M6			
Q2	8-729-926-19	TRANSISTOR 2SC4103-Q			
Q3	8-729-926-19	TRANSISTOR 2SC4103-Q			

Ref.No	Part No.	Description	Remark
Q4	8-729-118-58	TRANSISTOR 2SK852-X4	
Q5	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q6	8-729-117-16	TRANSISTOR 2SA1611-M6	
Q7	8-729-427-83	TRANSISTOR XP6501	
Q8	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q9	8-729-117-16	TRANSISTOR 2SA1611-M6	
Q10	8-729-926-19	TRANSISTOR 2SC4103-Q	
Q11	8-729-926-19	TRANSISTOR 2SC4103-Q	
Q12	8-729-117-16	TRANSISTOR 2SA1611-M6	
Q13	8-729-427-83	TRANSISTOR XP6501	
Q14	8-729-117-16	TRANSISTOR 2SA1611-M6	
Q15	8-729-926-19	TRANSISTOR 2SC4103-Q	
Q16	8-729-926-19	TRANSISTOR 2SC4103-Q	
Q17	8-729-427-83	TRANSISTOR XP6501	
Q18	8-729-118-58	TRANSISTOR 2SK852-X4	
Q19	8-729-117-16	TRANSISTOR 2SA1611-M6	
Q20	8-729-427-83	TRANSISTOR XP6501	
Q21	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q22	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q23	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q24	8-729-117-16	TRANSISTOR 2SA1611-M6	
Q25	8-729-117-16	TRANSISTOR 2SA1611-M6	
Q26	8-729-117-16	TRANSISTOR 2SA1611-M6	
Q27	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q28	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q29	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q30	8-729-427-83	TRANSISTOR XP6501	
Q31	8-729-117-16	TRANSISTOR 2SA1611-M6	
Q32	8-729-427-83	TRANSISTOR XP6501	
Q33	8-729-429-98	TRANSISTOR XP1401	
Q34	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q35	8-729-427-74	TRANSISTOR XP4601	
Q36	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q37	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q38	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q39	8-729-926-19	TRANSISTOR 2SC4103-Q	
Q40	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q41	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q42	8-729-427-74	TRANSISTOR XP4601	
Q43	8-729-427-83	TRANSISTOR XP6501	
Q44	8-729-117-16	TRANSISTOR 2SA1611-M6	
Q45	8-729-427-74	TRANSISTOR XP4601	
Q46	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q47	8-729-117-16	TRANSISTOR 2SA1611-M6	
Q48	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q49	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q50	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q51	8-729-926-19	TRANSISTOR 2SC4103-Q	
Q52	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q53	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q54	8-729-427-74	TRANSISTOR XP4601	
Q55	8-729-427-83	TRANSISTOR XP6501	
Q56	8-729-117-16	TRANSISTOR 2SA1611-M6	
Q57	8-729-427-74	TRANSISTOR XP4601	
Q58	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q59	8-729-117-16	TRANSISTOR 2SA1611-M6	
Q60	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q61	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q62	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q63	8-729-926-19	TRANSISTOR 2SC4103-Q	
Q64	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q65	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q66	8-729-427-74	TRANSISTOR XP4601	
Q67	8-729-427-83	TRANSISTOR XP6501	

Ref.No	Part No.	Description			Remark
Q68	8-729-117-16	TRANSISTOR 2SA1611-M6			
Q69	8-729-427-74	TRANSISTOR XP4601			
Q70	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q71	8-729-117-16	TRANSISTOR 2SA1611-M6			
Q78	8-729-926-19	TRANSISTOR 2SC4103-Q			
Q79	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q80	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q81	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q82	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q83	8-729-427-83	TRANSISTOR XP6501			
Q84	8-729-427-83	TRANSISTOR XP6501			
Q85	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q86	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q87	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q88	8-729-117-32	TRANSISTOR 2SC4177-L6			
		<RESISTOR>			
R1	1-216-821-11	METAL	1K	5%	1/16W
R2	1-216-828-11	METAL	3.9K	5%	1/16W
R3	1-216-828-11	METAL	3.9K	5%	1/16W
R4	1-216-840-11	METAL	39K	5%	1/16W
R5	1-216-817-11	METAL	470	5%	1/16W
R6	1-216-845-11	METAL	100K	5%	1/16W
R7	1-216-824-11	METAL	1.8K	5%	1/16W
R8	1-216-828-11	METAL	3.9K	5%	1/16W
R9	1-216-832-11	METAL	8.2K	5%	1/16W
R10	1-216-827-11	METAL	3.3K	5%	1/16W
R11	1-216-833-11	METAL	10K	5%	1/16W
R12	1-218-482-11	METAL	430	0.50%	1/16W
R13	1-216-850-11	METAL	270K	5%	1/16W
R14	1-216-833-11	METAL	10K	5%	1/16W
R15	1-216-826-11	METAL	2.7K	5%	1/16W
R16	1-216-821-11	METAL	1K	5%	1/16W
R17	1-216-821-11	METAL	1K	5%	1/16W
R18	1-218-700-11	METAL	2.2K	0.50%	1/16W
R19	1-218-722-11	METAL	18K	0.50%	1/16W
R20	1-216-828-11	METAL	3.9K	5%	1/16W
R21	1-218-692-11	METAL	1K	0.50%	1/16W
R22	1-216-821-11	METAL	1K	5%	1/16W
R23	1-216-828-11	METAL	3.9K	5%	1/16W
R24	1-216-840-11	METAL	39K	5%	1/16W
R25	1-216-828-11	METAL	3.9K	5%	1/16W
R26	1-216-821-11	METAL	1K	5%	1/16W
R27	1-216-845-11	METAL	100K	5%	1/16W
R28	1-216-824-11	METAL	1.8K	5%	1/16W
R29	1-216-828-11	METAL	3.9K	5%	1/16W
R30	1-216-832-11	METAL	8.2K	5%	1/16W
R31	1-216-827-11	METAL	3.3K	5%	1/16W
R32	1-216-826-11	METAL	2.7K	5%	1/16W
R33	1-216-823-11	METAL	1.5K	5%	1/16W
R34	1-216-821-11	METAL	1K	5%	1/16W
R35	1-218-700-11	METAL	2.2K	0.50%	1/16W
R36	1-218-722-11	METAL	18K	0.50%	1/16W
R37	1-216-828-11	METAL	3.9K	5%	1/16W
R38	1-216-821-11	METAL	1K	5%	1/16W
R39	1-216-828-11	METAL	3.9K	5%	1/16W
R40	1-216-840-11	METAL	39K	5%	1/16W
R41	1-216-828-11	METAL	3.9K	5%	1/16W
R42	1-216-817-11	METAL	470	5%	1/16W
R43	1-216-845-11	METAL	100K	5%	1/16W
R44	1-216-824-11	METAL	1.8K	5%	1/16W
R45	1-216-828-11	METAL	3.9K	5%	1/16W
R46	1-216-832-11	METAL	8.2K	5%	1/16W

Ref.No	Part No.	Description			Remark
R47	1-216-827-11	METAL	3.3K	5%	1/16W
R48	1-216-841-11	METAL	47K	5%	1/16W
R49	1-216-841-11	METAL	47K	5%	1/16W
R50	1-216-833-11	METAL	10K	5%	1/16W
R51	1-216-850-11	METAL	270K	5%	1/16W
R52	1-216-821-11	METAL	1K	5%	1/16W
R53	1-216-833-11	METAL	10K	5%	1/16W
R54	1-216-826-11	METAL	2.7K	5%	1/16W
R55	1-216-821-11	METAL	1K	5%	1/16W
R56	1-216-821-11	METAL	1K	5%	1/16W
R57	1-218-700-11	METAL	2.2K	0.50%	1/16W
R58	1-218-722-11	METAL	18K	0.50%	1/16W
R59	1-216-828-11	METAL	3.9K	5%	1/16W
R60	1-218-717-11	METAL	11K	0.50%	1/16W
R61	1-218-724-11	METAL	22K	0.50%	1/16W
R62	1-216-814-11	METAL	270	0.50%	1/16W
R63	1-218-710-11	METAL	5.6K	0.50%	1/16W
R64	1-218-858-11	METAL	3K	0.50%	1/16W
R65	1-218-721-11	METAL	16K	0.50%	1/16W
R66	1-216-831-11	METAL	6.8K	5%	1/16W
R67	1-216-831-11	METAL	6.8K	5%	1/16W
R68	1-216-837-11	METAL	22K	5%	1/16W
R69	1-216-837-11	METAL	22K	5%	1/16W
R70	1-218-724-11	METAL	22K	0.50%	1/16W
R71	1-218-724-11	METAL	22K	0.50%	1/16W
R72	1-218-724-11	METAL	22K	0.50%	1/16W
R73	1-218-858-11	METAL	3K	0.50%	1/16W
R74	1-218-702-11	METAL	2.7K	0.50%	1/16W
R75	1-218-858-11	METAL	3K	0.50%	1/16W
R76	1-216-830-11	METAL	5.6K	5%	1/16W
R77	1-216-830-11	METAL	5.6K	5%	1/16W
R78	1-216-830-11	METAL	5.6K	5%	1/16W
R79	1-218-881-11	METAL	27K	0.50%	1/16W
R80	1-218-724-11	METAL	22K	0.50%	1/16W
R81	1-218-724-11	METAL	22K	0.50%	1/16W
R82	1-218-724-11	METAL	22K	0.50%	1/16W
R83	1-218-881-11	METAL	27K	0.50%	1/16W
R86	1-216-828-11	METAL	3.9K	5%	1/16W
R87	1-216-831-11	METAL	6.8K	5%	1/16W
R88	1-216-831-11	METAL	6.8K	5%	1/16W
R89	1-216-831-11	METAL	6.8K	5%	1/16W
R90	1-216-833-11	METAL	10K	5%	1/16W
R91	1-216-831-11	METAL	6.8K	5%	1/16W
R92	1-216-833-11	METAL	10K	5%	1/16W
R93	1-216-825-11	METAL	2.2K	5%	1/16W
R94	1-216-833-11	METAL	10K	5%	1/16W
R95	1-216-821-11	METAL	1K	5%	1/16W
R96	1-216-827-11	METAL	3.3K	5%	1/16W
R97	1-216-821-11	METAL	1K	5%	1/16W
R98	1-216-831-11	METAL	6.8K	5%	1/16W
R99	1-216-837-11	METAL	22K	5%	1/16W
R100	1-216-841-11	METAL	47K	5%	1/16W
R102	1-216-825-11	METAL	2.2K	5%	1/16W
R103	1-216-825-11	METAL	2.2K	5%	1/16W
R104	1-216-827-11	METAL	3.3K	5%	1/16W
R105	1-216-825-11	METAL	2.2K	5%	1/16W
R106	1-216-825-11	METAL	2.2K	5%	1/16W
R107	1-216-825-11	METAL	2.2K	5%	1/16W
R108	1-216-833-11	METAL	10K	5%	1/16W
R109	1-216-833-11	METAL	10K	5%	1/16W
R110	1-216-821-11	METAL	1K	5%	1/16W
R111	1-216-833-11	METAL	10K	5%	1/16W
R112	1-216-832-11	METAL	8.2K	5%	1/16W
R113	1-216-830-11	METAL	5.6K	5%	1/16W

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Ref.No	Part No.	Description			Remark
R114	1-216-821-11	METAL	1K	5%	1/16W
R115	1-216-833-11	METAL	10K	5%	1/16W
R116	1-216-821-11	METAL	1K	5%	1/16W
R117	1-218-705-11	METAL	3.6K	0.50%	1/16W
R118	1-216-825-11	METAL	2.2K	5%	1/16W
R119	1-216-829-11	METAL	4.7K	5%	1/16W
R120	1-218-844-11	METAL	750	0.50%	1/16W
R121	1-218-692-11	METAL	1K	0.50%	1/16W
R122	1-216-825-11	METAL	2.2K	5%	1/16W
R123	1-216-829-11	METAL	4.7K	5%	1/16W
R124	1-216-827-11	METAL	3.3K	5%	1/16W
R125	1-216-835-11	METAL	15K	5%	1/16W
R126	1-216-829-11	METAL	4.7K	5%	1/16W
R127	1-216-809-11	METAL	100	5%	1/16W
R128	1-216-829-11	METAL	4.7K	5%	1/16W
R129	1-216-825-11	METAL	2.2K	5%	1/16W
R130	1-216-821-11	METAL	1K	5%	1/16W
R131	1-218-700-11	METAL	2.2K	0.50%	1/16W
R132	1-218-708-11	METAL	4.7K	0.50%	1/16W
R133	1-216-829-11	METAL	4.7K	5%	1/16W
R134	1-216-827-11	METAL	3.3K	5%	1/16W
R135	1-216-797-11	METAL	10	5%	1/16W
R136	1-216-797-11	METAL	10	5%	1/16W
R137	1-216-797-11	METAL	10	5%	1/16W
R138	1-216-797-11	METAL	10	5%	1/16W
R139	1-216-821-11	METAL	1K	5%	1/16W
R140	1-216-833-11	METAL	10K	5%	1/16W
R141	1-216-821-11	METAL	1K	5%	1/16W
R142	1-216-825-11	METAL	2.2K	5%	1/16W
R143	1-218-705-11	METAL	3.6K	0.50%	1/16W
R144	1-216-829-11	METAL	4.7K	5%	1/16W
R145	1-218-844-11	METAL	750	0.50%	1/16W
R146	1-218-692-11	METAL	1K	0.50%	1/16W
R147	1-216-825-11	METAL	2.2K	5%	1/16W
R148	1-216-829-11	METAL	4.7K	5%	1/16W
R149	1-216-827-11	METAL	3.3K	5%	1/16W
R150	1-216-835-11	METAL	15K	5%	1/16W
R151	1-216-829-11	METAL	4.7K	5%	1/16W
R152	1-216-809-11	METAL	100	5%	1/16W
R153	1-216-829-11	METAL	4.7K	5%	1/16W
R154	1-216-825-11	METAL	2.2K	5%	1/16W
R155	1-216-821-11	METAL	1K	5%	1/16W
R156	1-218-700-11	METAL	2.2K	0.50%	1/16W
R157	1-218-708-11	METAL	4.7K	0.50%	1/16W
R158	1-216-829-11	METAL	4.7K	5%	1/16W
R159	1-216-827-11	METAL	3.3K	5%	1/16W
R160	1-216-797-11	METAL	10	5%	1/16W
R161	1-216-797-11	METAL	10	5%	1/16W
R162	1-216-797-11	METAL	10	5%	1/16W
R163	1-216-797-11	METAL	10	5%	1/16W
R164	1-216-821-11	METAL	1K	5%	1/16W
R165	1-216-833-11	METAL	10K	5%	1/16W
R166	1-216-821-11	METAL	1K	5%	1/16W
R167	1-216-825-11	METAL	2.2K	5%	1/16W
R168	1-218-705-11	METAL	3.6K	0.50%	1/16W
R169	1-216-829-11	METAL	4.7K	5%	1/16W
R170	1-218-844-11	METAL	750	0.50%	1/16W
R171	1-216-825-11	METAL	2.2K	5%	1/16W
R172	1-218-692-11	METAL	1K	0.50%	1/16W
R173	1-216-829-11	METAL	4.7K	5%	1/16W
R174	1-216-827-11	METAL	3.3K	5%	1/16W
R175	1-216-835-11	METAL	15K	5%	1/16W
R176	1-216-829-11	METAL	4.7K	5%	1/16W
R177	1-216-809-11	METAL	100	5%	1/16W
R178	1-216-829-11	METAL	4.7K	5%	1/16W

Ref.No	Part No.	Description			Remark
R179	1-216-825-11	METAL	2.2K	5%	1/16W
R180	1-216-821-11	METAL	1K	5%	1/16W
R181	1-218-700-11	METAL	2.2K	0.50%	1/16W
R182	1-216-829-11	METAL	4.7K	5%	1/16W
R183	1-218-708-11	METAL	4.7K	0.50%	1/16W
R184	1-216-827-11	METAL	3.3K	5%	1/16W
R185	1-216-797-11	METAL	10	5%	1/16W
R186	1-216-797-11	METAL	10	5%	1/16W
R187	1-216-797-11	METAL	10	5%	1/16W
R188	1-216-797-11	METAL	10	5%	1/16W
R189	1-216-845-11	METAL	100K	5%	1/16W
R190	1-218-725-11	METAL	24K	0.50%	1/16W
R191	1-216-833-11	METAL	10K	5%	1/16W
R192	1-216-833-11	METAL	10K	5%	1/16W
R193	1-216-841-11	METAL	47K	5%	1/16W
R194	1-216-845-11	METAL	100K	5%	1/16W
R195	1-216-833-11	METAL	10K	5%	1/16W
R196	1-218-873-11	METAL	12K	0.50%	1/16W
R197	1-218-873-11	METAL	12K	0.50%	1/16W
R198	1-218-873-11	METAL	12K	0.50%	1/16W
R199	1-218-729-11	METAL	36K	0.50%	1/16W
R200	1-218-729-11	METAL	36K	0.50%	1/16W
R201	1-218-729-11	METAL	36K	0.50%	1/16W
R202	1-216-824-11	METAL	1.8K	5%	1/16W
R203	1-216-824-11	METAL	1.8K	5%	1/16W
R204	1-216-824-11	METAL	1.8K	5%	1/16W
R231	1-216-821-11	METAL	1K	5%	1/16W
R232	1-216-827-11	METAL	3.3K	5%	1/16W
R233	1-216-826-11	METAL	2.7K	5%	1/16W
R234	1-216-833-11	METAL	10K	5%	1/16W
R235	1-216-832-11	METAL	8.2K	5%	1/16W
R236	1-216-829-11	METAL	4.7K	5%	1/16W
R237	1-216-821-11	METAL	1K	5%	1/16W
R238	1-216-821-11	METAL	1K	5%	1/16W
R239	1-216-829-11	METAL	4.7K	5%	1/16W
R240	1-216-821-11	METAL	1K	5%	1/16W
R241	1-216-821-11	METAL	1K	5%	1/16W
R242	1-216-829-11	METAL	4.7K	5%	1/16W
R243	1-216-821-11	METAL	1K	5%	1/16W
R244	1-216-821-11	METAL	1K	5%	1/16W
R245	1-216-829-11	METAL	4.7K	5%	1/16W
R246	1-218-700-11	METAL	2.2K	0.50%	1/16W
R247	1-218-699-11	METAL	2K	0.50%	1/16W
R248	1-218-692-11	METAL	1K	0.50%	1/16W
R249	1-218-692-11	METAL	1K	0.50%	1/16W
R250	1-218-254-11	METAL	2.55K	0.50%	1/10W
R251	1-218-259-11	METAL	13.7K	0.50%	1/10W
R252	1-216-823-11	METAL	1.5K	5%	1/16W
R253	1-216-829-11	METAL	4.7K	5%	1/16W
R254	1-216-826-11	METAL	2.7K	5%	1/16W
R255	1-216-827-11	METAL	3.3K	5%	1/16W
R256	1-218-700-11	METAL	2.2K	0.50%	1/16W
R257	1-218-699-11	METAL	2K	0.50%	1/16W
R258	1-218-851-11	METAL	1.5K	0.50%	1/16W
R259	1-218-851-11	METAL	1.5K	0.50%	1/16W
R260	1-218-254-11	METAL	2.55K	0.50%	1/10W
R261	1-218-257-11	METAL	4.99K	0.50%	1/10W
R262	1-216-823-11	METAL	1.5K	5%	1/16W
R263	1-216-829-11	METAL	4.7K	5%	1/16W
R264	1-216-826-11	METAL	2.7K	5%	1/16W
R265	1-216-827-11	METAL	3.3K	5%	1/16W
R266	1-216-837-11	METAL	22K	5%	1/16W
R267	1-216-837-11	METAL	22K	5%	1/16W

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No	Part No.	Description			Remark
		<VARIABLE RESISTOR>			
RV1	1-238-853-11	s RES, ADJ, CERMET 1K			
RV2	1-238-853-11	s RES, ADJ, CERMET 1K			
RV3	1-238-853-11	s RES, ADJ, CERMET 1K			
RV4	1-238-854-11	s RES, ADJ, CERMET 2.2K			
RV5	1-238-854-11	s RES, ADJ, CERMET 2.2K			
RV6	1-238-854-11	s RES, ADJ, CERMET 2.2K			
RV8	1-238-853-11	s RES, ADJ, CERMET 1K			
RV9	1-238-853-11	s RES, ADJ, CERMET 1K			
RV10	1-238-853-11	s RES, ADJ, CERMET 1K			

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*A-8275-619-A CN-909 BOARD, COMPLETE
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Ref.No	Part No.	Description			Remark
		<CAPACITOR>			
C1	1-135-076-21	TANTAL	1uF	20%	35V
C2	1-162-966-11	CERAMIC	0.0022uF	10%	50V
C4	1-162-966-11	CERAMIC	0.0022uF	10%	50V
C5	1-162-966-11	CERAMIC	0.0022uF	10%	50V
C6	1-162-966-11	CERAMIC	0.0022uF	10%	50V
C7	1-162-966-11	CERAMIC	0.0022uF	10%	50V
C8	1-135-076-21	TANTAL	1uF	20%	35V
C9	1-135-076-21	TANTAL	1uF	20%	35V
C10	1-162-966-11	CERAMIC	0.0022uF	10%	50V
C12	1-135-076-21	TANTAL	1uF	20%	35V
C13	1-162-970-11	CERAMIC	0.01uF	10%	25V
C14	1-162-964-11	CERAMIC	0.001uF	10%	50V
C15	1-162-907-11	CERAMIC	2PF		50V
C16	1-162-919-11	CERAMIC	22PF	5%	50V
C17	1-164-156-11	CERAMIC	0.1uF		25V
C18	1-135-161-21	TANTAL	22uF	20%	6.3V
C19	1-162-966-11	CERAMIC	0.0022uF	10%	50V
		<CONNECTOR>			
CN1	1-566-531-11	CONNECTOR, FPC (ZIF) 15P			
CN2	1-566-531-11	CONNECTOR, FPC (ZIF) 15P			
		<DIODE>			
D1	8-719-510-30	DIODE D2FL20			
D2	8-719-105-51	DIODE RD3.6M-B1			
D4	8-719-105-91	DIODE RD5.6M-B2			
D5	8-719-105-91	DIODE RD5.6M-B2			
D8	8-719-105-91	DIODE RD5.6M-B2			
D12	8-719-105-91	DIODE RD5.6M-B2			
D13	8-719-105-91	DIODE RD5.6M-B2			
D14	8-719-105-91	DIODE RD5.6M-B2			
D15	8-719-105-91	DIODE RD5.6M-B2			
D16	8-719-800-76	DIODE 1SS226			
D17	8-719-105-91	DIODE RD5.6M-B2			
		<FUSE>			
F1	⚠1-576-212-21	FUSE, CHIP			
		<IC>			
IC1	8-759-518-85	IC S16MD01			
IC2	8-759-031-84	IC SC7S04F			
		<INDUCTOR>			
L1	1-412-390-21	INDUCTOR CHIP 0UH			
L2	1-412-390-21	INDUCTOR CHIP 0UH			
L3	1-412-031-11	INDUCTOR CHIP 47UH			
L4	1-412-031-11	INDUCTOR CHIP 47UH			
L5	1-412-026-11	INDUCTOR CHIP 1UH			
L6	1-412-390-21	INDUCTOR CHIP 0UH			
L7	1-412-390-21	INDUCTOR CHIP 0UH			
L9	1-410-993-11	INDUCTOR CHIP 1UH			
L10	1-410-993-11	INDUCTOR CHIP 1UH			
L11	1-410-993-11	INDUCTOR CHIP 1UH			
L12	1-410-993-11	INDUCTOR CHIP 1UH			
L13	1-410-993-11	INDUCTOR CHIP 1UH			
		<TRANSISTOR>			
Q1	8-729-905-18	TRANSISTOR DTC144EU			
Q2	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q3	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q4	8-729-117-16	TRANSISTOR 2SA1611-M6			
Q5	8-729-117-16	TRANSISTOR 2SA1611-M6			
Q6	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q7	8-729-117-16	TRANSISTOR 2SA1611-M6			
Q8	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q9	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q10	8-729-117-32	TRANSISTOR 2SC4177-L6			
Q11	8-729-905-18	TRANSISTOR DTC144EU			
		<RESISTOR>			
R1	1-216-833-11	METAL	10K	5%	1/16W
R2	1-216-821-11	METAL	1K	5%	1/16W
R3	1-216-823-11	METAL	1.5K	5%	1/16W
R4	1-216-824-11	METAL	1.8K	5%	1/16W
R5	1-218-701-11	METAL	2.4K	0.50%	1/16W
R6	1-218-723-11	METAL	20K	0.50%	1/16W
R7	1-216-839-11	METAL	33K	5%	1/16W
R8	1-218-285-11	METAL	75	5%	1/16W
R9	1-218-285-11	METAL	75	5%	1/16W
R10	1-218-285-11	METAL	75	5%	1/16W
R11	1-218-285-11	METAL	75	5%	1/16W
R12	1-216-809-11	METAL	100	5%	1/16W
R13	1-216-809-11	METAL	100	5%	1/16W
R16	1-216-825-11	METAL	2.2K	5%	1/16W
R17	1-218-285-11	METAL	75	5%	1/16W
R18	1-216-003-11	METAL	12	5%	1/10W
R19	1-216-819-11	METAL	680	5%	1/16W
R20	1-216-801-11	METAL	22	5%	1/16W
R21	1-216-833-11	METAL	10K	5%	1/16W
R22	1-216-809-11	METAL	100	5%	1/16W
R23	1-216-826-11	METAL	2.7K	5%	1/16W
R24	1-216-822-11	METAL	1.2K	5%	1/16W
R25	1-216-835-11	METAL	15K	5%	1/16W
R27	1-216-828-11	METAL	3.9K	5%	1/16W
R28	1-216-833-11	METAL	10K	5%	1/16W
R29	1-216-833-11	METAL	10K	5%	1/16W
R30	1-216-826-11	METAL	2.7K	5%	1/16W
R31	1-216-832-11	METAL	8.2K	5%	1/16W
R32	1-216-821-11	METAL	1K	5%	1/16W
R33	1-216-820-11	METAL	820	5%	1/16W
R34	1-216-809-11	METAL	100	5%	1/16W
R35	1-216-813-11	METAL	220	5%	1/16W
R37	1-216-826-11	METAL	2.7K	5%	1/16W
R42	1-216-821-11	METAL	1K	5%	1/16W
R43	1-216-833-11	METAL	10K	5%	1/16W
R44	1-216-837-11	METAL	22K	5%	1/16W
R45	1-216-834-11	METAL	12K	5%	1/16W
R46	1-216-832-11	METAL	8.2K	5%	1/16W
R47	1-216-833-11	METAL	10K	5%	1/16W
R48	1-216-833-11	METAL	10K	5%	1/16W
R49	1-218-285-11	METAL	75	0.50%	1/16W

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

CN-909 CN-919 ADA-33

Ref.No	Part No.	Description			Remark
		<SWITCH>			
S1	1-571-787-11	SWITCH, TACTILE			
S2	1-571-787-11	SWITCH, TACTILE			
S3	1-571-787-11	SWITCH, TACTILE			
S4	1-571-787-11	SWITCH, TACTILE			
S5	1-571-787-11	SWITCH, TACTILE			
S6	1-571-787-11	SWITCH, TACTILE			

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Ref.No	Part No.	Description			Remark
	*A-8275-620-A	CN-919 BOARD, COMPLETE **********************			
	1-509-891-00	CONNECTOR, BNC (RECEPTACLE)			
	1-540-256-21	SOCKET, SYNCHRONIZE			
	1-562-381-00	CONNECTOR, ROUND TYPE 12P			
	1-563-345-11	CONNECTOR, D-SUB 9P			
	*1-569-733-11	CONNECTOR 20P			
	1-764-849-11	JACK			
	3-184-116-01	INSULATOR, SOCKET			
	7-621-772-10	SCREW +B 2X4			
	7-621-773-86	SCREW +B 2.6X4			
	7-628-254-40	SCREW +PS 2.6X12			
	1-533-162-00	HOLDER, FUSE			
		<CAPACITOR>			
C1	1-163-038-00	CERAMIC	0.1uF	0%	25V
C2	1-135-166-21	TANTAL	47uF	20%	10V
C3	1-135-166-21	TANTAL	47uF	20%	10V
C4	1-135-166-21	TANTAL	47uF	20%	10V
C5	1-163-038-00	CERAMIC	0.1uF		25V
C6	1-163-038-00	CERAMIC	0.1uF		25V
C7	1-163-038-00	CERAMIC	0.1uF		25V
C8	1-135-166-21	TANTAL	47uF	20%	10V
C9	1-163-038-00	CERAMIC	0.1uF		25V
C10	1-163-038-00	CERAMIC	0.1uF		25V
C11	1-163-038-00	CERAMIC	0.1uF		25V
C12	1-163-038-00	CERAMIC	0.1uF		25V
C13	1-163-038-00	CERAMIC	0.1uF		25V
C14	1-163-038-00	CERAMIC	0.1uF		25V
C15	1-163-038-00	CERAMIC	0.1uF		25V
C16	1-163-038-00	CERAMIC	0.1uF		25V
C17	1-163-038-00	CERAMIC	0.1uF		25V
C18	1-163-038-00	CERAMIC	0.1uF		25V
		<CONNECTOR>			
CN1	1-573-598-11	CONNECTOR, PC BOARD 100P			
CN2	1-573-598-11	CONNECTOR, PC BOARD 100P			
CN3	1-573-598-11	CONNECTOR, PC BOARD 100P			
CN4	1-573-598-11	CONNECTOR, PC BOARD 100P			
CN5	1-573-598-11	CONNECTOR, PC BOARD 100P			
CN6	*1-506-610-11	PIN, CONNECTOR 10P			
CN7	*1-506-945-11	PIN, CONNECTOR 3P			
CN8	*1-506-702-11	CONNECTOR POST HEADER, ILG (3P)			
CN19	*1-573-784-91	CONNECTOR, PC BOARD 60P			
CN20	*1-573-784-91	CONNECTOR, PC BOARD 60P			
		<DIODE>			
D1	8-719-157-36	DIODE RD6.8M-B			
D3	8-719-980-78	DIODE ERA83-006			
		<FUSE>			
F1	⚠1-532-743-11	FUSE, GLASS TUBE			
F2	⚠1-532-743-11	FUSE, GLASS TUBE			
		<FERRITE BEAD>			
FB3	1-410-396-71	INDUCTOR 0.45UH			
		<FILTER>			
FL1	1-239-129-21	FILTER, CHIP EMI			
		<IC>			
IC1	8-759-197-40	IC BH9590FP-Y-T1			
IC2	8-759-518-85	IC S16MD01			
IC3	8-759-058-98	IC SC370605D			
IC4	8-759-937-54	IC S-81250HG-RD-S			
IC5	8-759-031-84	IC SC7S04F			
		<INDUCTOR>			
L1	1-408-777-00	INDUCTOR CHIP 10UH			
L2	1-408-777-00	INDUCTOR CHIP 10UH			
L3	1-408-777-00	INDUCTOR CHIP 10UH			
		<TRANSISTOR>			
Q1	8-729-901-01	TRANSISTOR DTC144EK			
		<RESISTOR>			
R1	1-216-033-00	METAL	220	5%	1/10W
R2	1-216-089-91	METAL	47K	5%	1/10W
R3	1-216-022-00	METAL	75	5%	1/10W
R4	1-216-022-00	METAL	75	5%	1/10W
R5	1-216-073-00	METAL	10K	5%	1/10W
R6	1-216-073-00	METAL	10K	5%	1/10W
R7	1-216-073-00	METAL	10K	5%	1/10W
R8	1-216-073-00	METAL	10K	5%	1/10W
R9	1-216-073-00	METAL	10K	5%	1/10W
		<SWITCH>			
S1	1-570-863-11	SWITCH, SLIDE			
S2	1-516-925-21	SWITCH, DIP			
S3	1-516-925-21	SWITCH, DIP			

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Ref.No	Part No.	Description			Remark
	*A-8275-621-A	ADA-33 BOARD, COMPLETE **********************			
	1-533-189-11	HOLDER, FUSE			
	*2-182-909-01	LEVER, PC BOARD			
	7-626-320-11	PIN, SPRING 3X8			
	7-685-903-11	SCREW +PTPWH 3X6 (TYPE2)			
		<CAPACITOR>			
C1	1-126-925-11	ELECT	470uF	20%	10V
C2	1-126-933-11	ELECT	100uF	20%	16V
C3	1-163-038-00	CERAMIC	0.1uF		25V
C4	1-126-934-11	ELECT	220uF	20%	16V
C5	1-126-934-11	ELECT	220uF	20%	16V
C6	1-126-933-11	ELECT	100uF	20%	16V
C7	1-126-933-11	ELECT	100uF	20%	16V
C8	1-163-038-00	CERAMIC	0.1uF		25V
C9	1-163-038-00	CERAMIC	0.1uF		25V
C10	1-135-216-11	TANTAL	10uF	20%	10V
C11	1-135-216-11	TANTAL	10uF	20%	10V
C12	1-163-227-11	CERAMIC	10PF		50V
C13	1-163-089-00	CERAMIC	6PF		50V
C14	1-135-091-91	TANTAL	1uF	20%	16V
C15	1-163-275-11	CERAMIC	0.001uF	5%	50V
C16	1-163-038-00	CERAMIC	0.1uF		25V
C17	1-163-038-00	CERAMIC	0.1uF		25V

Ref.No	Part No.	Description			Remark
C18	1-163-038-00	CERAMIC	0.1uF		25V
C19	1-163-038-00	CERAMIC	0.1uF		25V
C20	1-163-038-00	CERAMIC	0.1uF		25V
C21	1-163-038-00	CERAMIC	0.1uF		25V
C22	1-163-038-00	CERAMIC	0.1uF		25V
C23	1-163-038-00	CERAMIC	0.1uF		25V
C25	1-163-038-00	CERAMIC	0.1uF		25V
C26	1-163-038-00	CERAMIC	0.1uF		25V
C27	1-163-038-00	CERAMIC	0.1uF		25V
C28	1-163-038-00	CERAMIC	0.1uF		25V
C29	1-163-038-00	CERAMIC	0.1uF		25V
C30	1-163-038-00	CERAMIC	0.1uF		25V
C31	1-163-038-00	CERAMIC	0.1uF		25V
C32	1-163-038-00	CERAMIC	0.1uF		25V
C33	1-163-038-00	CERAMIC	0.1uF		25V
C34	1-163-038-00	CERAMIC	0.1uF		25V
C35	1-163-038-00	CERAMIC	0.1uF		25V
C36	1-163-038-00	CERAMIC	0.1uF		25V
C39	1-135-091-91	TANTAL	1uF	20%	16V
C40	1-163-038-00	CERAMIC	0.1uF		25V
C41	1-163-038-00	CERAMIC	0.1uF		25V
C42	1-163-038-00	CERAMIC	0.1uF		25V
C43	1-163-038-00	CERAMIC	0.1uF		25V
C44	1-163-235-11	CERAMIC	22PF	5%	50V
C45	1-163-251-11	CERAMIC	100PF	5%	50V
C101	1-135-166-21	TANTAL	47uF	20%	10V
C102	1-126-204-11	ELECT	47uF	20%	16V
C103	1-163-038-00	CERAMIC	0.1uF		25V
C104	1-163-038-00	CERAMIC	0.1uF		25V
C105	1-164-232-11	CERAMIC	0.01uF	10%	50V
C106	1-135-091-91	TANTAL	1uF	20%	16V
C107	1-163-275-11	CERAMIC	0.001uF	5%	50V
C108	1-163-085-00	CERAMIC	2PF		50V
C109	1-163-089-00	CERAMIC	6PF		50V
C110	1-135-091-91	TANTAL	1uF	20%	16V
C111	1-163-222-11	CERAMIC	5PF		50V
C112	1-163-038-00	CERAMIC	0.1uF		25V
C113	1-163-038-00	CERAMIC	0.1uF		25V
C114	1-163-222-11	CERAMIC	5PF		50V
C115	1-163-235-11	CERAMIC	22PF	5%	50V
C116	1-163-251-11	CERAMIC	100PF	5%	50V
C117	1-135-091-91	TANTAL	1uF	20%	16V
C118	1-135-070-00	TANTAL	0.1uF	20%	35V
C119	1-135-166-21	TANTAL	47uF	20%	10V
C120	1-164-232-11	CERAMIC	0.01uF	10%	50V
C121	1-135-091-91	TANTAL	1uF	20%	16V
C122	1-164-232-11	CERAMIC	0.01uF	10%	50V
C123	1-135-166-21	TANTAL	47uF	20%	10V
C124	1-135-166-21	TANTAL	47uF	20%	10V
C125	1-163-038-00	CERAMIC	0.1uF		25V
C126	1-163-038-00	CERAMIC	0.1uF		25V
C127	1-163-038-00	CERAMIC	0.1uF		25V
C129	1-135-216-11	TANTAL	10uF	20%	10V
C130	1-163-038-00	CERAMIC	0.1uF		25V
C131	1-163-038-00	CERAMIC	0.1uF		25V
C132	1-163-038-00	CERAMIC	0.1uF		25V
C133	1-163-038-00	CERAMIC	0.1uF		25V
C134	1-163-038-00	CERAMIC	0.1uF		25V
C135	1-135-216-11	TANTAL	10uF	20%	10V
C136	1-163-038-00	CERAMIC	0.1uF		25V
C137	1-135-166-21	TANTAL	47uF	20%	10V
C138	1-163-087-00	CERAMIC	4PF		50V
C139	1-163-038-00	CERAMIC	0.1uF		25V
C140	1-163-038-00	CERAMIC	0.1uF		25V

Ref.No	Part No.	Description			Remark
C141	1-163-038-00	CERAMIC	0.1uF		25V
C142	1-163-038-00	CERAMIC	0.1uF		25V
C143	1-163-038-00	CERAMIC	0.1uF		25V
C144	1-163-038-00	CERAMIC	0.1uF		25V
C145	1-163-038-00	CERAMIC	0.1uF		25V
C146	1-163-038-00	CERAMIC	0.1uF		25V
C147	1-163-038-00	CERAMIC	0.1uF		25V
C148	1-163-038-00	CERAMIC	0.1uF		25V
C149	1-163-038-00	CERAMIC	0.1uF		25V
C150	1-163-038-00	CERAMIC	0.1uF		25V
C151	1-163-038-00	CERAMIC	0.1uF		25V
C152	1-163-038-00	CERAMIC	0.1uF		25V
C155	1-163-239-11	CERAMIC	33PF	5%	50V
C158	1-163-038-00	CERAMIC	0.1uF		25V
C160	1-163-038-00	CERAMIC	0.1uF		25V
C161	1-163-038-00	CERAMIC	0.1uF		25V
C162	1-163-038-00	CERAMIC	0.1uF		25V
C165	1-163-038-00	CERAMIC	0.1uF		25V
C166	1-163-038-00	CERAMIC	0.1uF		25V
C170	1-163-038-00	CERAMIC	0.1uF		25V
C171	1-163-038-00	CERAMIC	0.1uF		25V
C172	1-163-038-00	CERAMIC	0.1uF		25V
C173	1-163-038-00	CERAMIC	0.1uF		25V
C174	1-163-038-00	CERAMIC	0.1uF		25V
C175	1-163-038-00	CERAMIC	0.1uF		25V
C180	1-163-038-00	CERAMIC	0.1uF		25V
C181	1-135-166-21	TANTAL	47uF	20%	10V
C182	1-126-204-11	ELECT	47uF	20%	16V
C183	1-163-038-00	CERAMIC	0.1uF		25V
C184	1-163-089-00	CERAMIC	6PF		50V
C185	1-135-091-91	TANTAL	1uF	20%	16V
C186	1-163-085-00	CERAMIC	2PF		50V
C187	1-163-089-00	CERAMIC	6PF		50V
C188	1-135-091-91	TANTAL	1uF	20%	16V
C189	1-163-038-00	CERAMIC	0.1uF		25V
C190	1-163-038-00	CERAMIC	0.1uF		25V
C191	1-163-085-00	CERAMIC	2PF		50V
C201	1-135-166-21	TANTAL	47uF	20%	10V
C202	1-126-204-11	ELECT	47uF	20%	16V
C203	1-163-038-00	CERAMIC	0.1uF		25V
C204	1-163-038-00	CERAMIC	0.1uF		25V
C205	1-164-232-11	CERAMIC	0.01uF	10%	50V
C206	1-135-091-91	TANTAL	1uF	20%	16V
C207	1-163-275-11	CERAMIC	0.001uF	5%	50V
C208	1-163-085-00	CERAMIC	2PF		50V
C209	1-163-089-00	CERAMIC	6PF		50V
C210	1-135-091-91	TANTAL	1uF	20%	16V
C211	1-163-222-11	CERAMIC	5PF		50V
C212	1-163-038-00	CERAMIC	0.1uF		25V
C213	1-163-038-00	CERAMIC	0.1uF		25V
C214	1-163-222-11	CERAMIC	5PF		50V
C215	1-163-235-11	CERAMIC	22PF	5%	50V
C216	1-163-251-11	CERAMIC	100PF	5%	50V
C217	1-135-091-91	TANTAL	1uF	20%	16V
C218	1-135-070-00	TANTAL	0.1uF	20%	35V
C219	1-135-166-21	TANTAL	47uF	20%	10V
C220	1-164-232-11	CERAMIC	0.01uF	10%	50V
C221	1-135-091-91	TANTAL	1uF	20%	16V
C222	1-164-232-11	CERAMIC	0.01uF	10%	50V
C223	1-135-166-21	TANTAL	47uF	20%	10V
C224	1-135-166-21	TANTAL	47uF	20%	10V
C225	1-163-038-00	CERAMIC	0.1uF		25V
C226	1-163-038-00	CERAMIC	0.1uF		25V
C227	1-163-038-00	CERAMIC	0.1uF		25V

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Ref.No	Part No.	Description			Remark
C229	1-135-216-11	TANTAL	10uF	20%	10V
C230	1-163-038-00	CERAMIC	0.1uF		25V
C231	1-163-038-00	CERAMIC	0.1uF		25V
C232	1-163-038-00	CERAMIC	0.1uF		25V
C233	1-163-038-00	CERAMIC	0.1uF		25V
C234	1-163-038-00	CERAMIC	0.1uF		25V
C235	1-135-216-11	TANTAL	10uF	20%	10V
C236	1-163-038-00	CERAMIC	0.1uF		25V
C237	1-135-166-21	TANTAL	47uF	20%	10V
C238	1-163-087-00	CERAMIC	4PF		50V
C239	1-163-038-00	CERAMIC	0.1uF		25V
C240	1-163-038-00	CERAMIC	0.1uF		25V
C241	1-163-038-00	CERAMIC	0.1uF		25V
C242	1-163-038-00	CERAMIC	0.1uF		25V
C243	1-163-038-00	CERAMIC	0.1uF		25V
C244	1-163-038-00	CERAMIC	0.1uF		25V
C245	1-163-038-00	CERAMIC	0.1uF		25V
C246	1-163-038-00	CERAMIC	0.1uF		25V
C247	1-163-038-00	CERAMIC	0.1uF		25V
C248	1-163-038-00	CERAMIC	0.1uF		25V
C249	1-163-038-00	CERAMIC	0.1uF		25V
C250	1-163-038-00	CERAMIC	0.1uF		25V
C251	1-163-038-00	CERAMIC	0.1uF		25V
C252	1-163-038-00	CERAMIC	0.1uF		25V
C255	1-163-239-11	CERAMIC	33PF	5%	50V
C258	1-163-038-00	CERAMIC	0.1uF		25V
C260	1-163-038-00	CERAMIC	0.1uF		25V
C261	1-163-038-00	CERAMIC	0.1uF		25V
C270	1-163-038-00	CERAMIC	0.1uF		25V
C271	1-163-038-00	CERAMIC	0.1uF		25V
C272	1-163-038-00	CERAMIC	0.1uF		25V
C273	1-163-038-00	CERAMIC	0.1uF		25V
C274	1-163-038-00	CERAMIC	0.1uF		25V
C275	1-163-038-00	CERAMIC	0.1uF		25V
C280	1-163-038-00	CERAMIC	0.1uF		25V
C281	1-135-166-21	TANTAL	47uF	20%	10V
C282	1-126-204-11	ELECT	47uF	20%	16V
C283	1-163-038-00	CERAMIC	0.1uF		25V
C284	1-163-089-00	CERAMIC	6PF		50V
C285	1-135-091-91	TANTAL	1uF	20%	16V
C286	1-163-085-00	CERAMIC	2PF		50V
C287	1-163-089-00	CERAMIC	6PF		50V
C288	1-135-091-91	TANTAL	1uF	20%	16V
C289	1-163-038-00	CERAMIC	0.1uF		25V
C290	1-163-038-00	CERAMIC	0.1uF		25V
C291	1-163-085-00	CERAMIC	2PF		50V
C301	1-135-166-21	TANTAL	47uF	20%	10V
C302	1-126-204-11	ELECT	47uF	20%	16V
C303	1-163-038-00	CERAMIC	0.1uF		25V
C304	1-163-038-00	CERAMIC	0.1uF		25V
C305	1-164-232-11	CERAMIC	0.01uF	10%	50V
C306	1-135-091-91	TANTAL	1uF	20%	16V
C307	1-163-275-11	CERAMIC	0.001uF	5%	50V
C308	1-163-085-00	CERAMIC	2PF		50V
C309	1-163-089-00	CERAMIC	6PF		50V
C310	1-135-091-91	TANTAL	1uF	20%	16V
C311	1-163-222-11	CERAMIC	5PF		50V
C312	1-163-038-00	CERAMIC	0.1uF		25V
C313	1-163-038-00	CERAMIC	0.1uF		25V
C314	1-163-222-11	CERAMIC	5PF		50V
C315	1-163-235-11	CERAMIC	22PF	5%	50V
C316	1-163-251-11	CERAMIC	100PF	5%	50V
C317	1-135-091-91	TANTAL	1uF	20%	16V
C318	1-135-070-00	TANTAL	0.1uF	20%	35V
C319	1-135-166-21	TANTAL	47uF	20%	10V

Ref.No	Part No.	Description			Remark
C320	1-164-232-11	CERAMIC	0.01uF	10%	50V
C321	1-135-091-91	TANTAL	1uF	20%	16V
C322	1-164-232-11	CERAMIC	0.01uF	10%	50V
C323	1-135-166-21	TANTAL	47uF	20%	10V
C324	1-135-166-21	TANTAL	47uF	20%	10V
C325	1-163-038-00	CERAMIC	0.1uF		25V
C326	1-163-038-00	CERAMIC	0.1uF		25V
C327	1-163-038-00	CERAMIC	0.1uF		25V
C329	1-135-216-11	TANTAL	10uF	20%	10V
C330	1-163-038-00	CERAMIC	0.1uF		25V
C331	1-163-038-00	CERAMIC	0.1uF		25V
C332	1-163-038-00	CERAMIC	0.1uF		25V
C333	1-163-038-00	CERAMIC	0.1uF		25V
C334	1-163-038-00	CERAMIC	0.1uF		25V
C335	1-135-216-11	TANTAL	10uF	20%	10V
C336	1-163-038-00	CERAMIC	0.1uF		25V
C337	1-135-166-21	TANTAL	47uF	20%	10V
C338	1-163-087-00	CERAMIC	4PF		50V
C339	1-163-038-00	CERAMIC	0.1uF		25V
C340	1-163-038-00	CERAMIC	0.1uF		25V
C341	1-163-038-00	CERAMIC	0.1uF		25V
C342	1-163-038-00	CERAMIC	0.1uF		25V
C343	1-163-038-00	CERAMIC	0.1uF		25V
C344	1-163-038-00	CERAMIC	0.1uF		25V
C345	1-163-038-00	CERAMIC	0.1uF		25V
C346	1-163-038-00	CERAMIC	0.1uF		25V
C347	1-163-038-00	CERAMIC	0.1uF		25V
C348	1-163-038-00	CERAMIC	0.1uF		25V
C349	1-163-038-00	CERAMIC	0.1uF		25V
C350	1-163-038-00	CERAMIC	0.1uF		25V
C351	1-163-038-00	CERAMIC	0.1uF		25V
C352	1-163-038-00	CERAMIC	0.1uF		25V
C355	1-163-239-11	CERAMIC	33PF	5%	50V
C358	1-163-038-00	CERAMIC	0.1uF		25V
C360	1-163-038-00	CERAMIC	0.1uF		25V
C361	1-163-038-00	CERAMIC	0.1uF		25V
C370	1-163-038-00	CERAMIC	0.1uF		25V
C371	1-163-038-00	CERAMIC	0.1uF		25V
C372	1-163-038-00	CERAMIC	0.1uF		25V
C373	1-163-038-00	CERAMIC	0.1uF		25V
C374	1-163-038-00	CERAMIC	0.1uF		25V
C375	1-163-038-00	CERAMIC	0.1uF		25V
C380	1-163-038-00	CERAMIC	0.1uF		25V
C381	1-135-166-21	TANTAL	47uF	20%	10V
C382	1-126-204-11	ELECT	47uF	20%	16V
C383	1-163-038-00	CERAMIC	0.1uF		25V
C384	1-163-089-00	CERAMIC	6PF		50V
C385	1-135-091-91	TANTAL	1uF	20%	16V
C386	1-163-085-00	CERAMIC	2PF		50V
C387	1-163-089-00	CERAMIC	6PF		50V
C388	1-135-091-91	TANTAL	1uF	20%	16V
C389	1-163-038-00	CERAMIC	0.1uF		25V
C390	1-163-038-00	CERAMIC	0.1uF		25V
C391	1-163-085-00	CERAMIC	2PF		50V
C400	1-163-038-00	CERAMIC	0.1uF		25V
C401	1-163-038-00	CERAMIC	0.1uF		25V
C402	1-163-038-00	CERAMIC	0.1uF		25V
C403	1-163-038-00	CERAMIC	0.1uF		25V
C404	1-163-038-00	CERAMIC	0.1uF		25V
C405	1-163-038-00	CERAMIC	0.1uF		25V
C406	1-163-038-00	CERAMIC	0.1uF		25V
C407	1-163-038-00	CERAMIC	0.1uF		25V
C408	1-163-038-00	CERAMIC	0.1uF		25V
C409	1-163-038-00	CERAMIC	0.1uF		25V
C410	1-163-038-00	CERAMIC	0.1uF		25V

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No	Part No.	Description		Remark
C411	1-163-038-00	CERAMIC	0.1uF	25V
C412	1-163-038-00	CERAMIC	0.1uF	25V
C413	1-163-038-00	CERAMIC	0.1uF	25V
C414	1-163-038-00	CERAMIC	0.1uF	25V
C415	1-163-038-00	CERAMIC	0.1uF	25V
C416	1-163-038-00	CERAMIC	0.1uF	25V
C417	1-163-038-00	CERAMIC	0.1uF	25V
C418	1-163-038-00	CERAMIC	0.1uF	25V
C419	1-163-038-00	CERAMIC	0.1uF	25V
C420	1-163-038-00	CERAMIC	0.1uF	25V
C421	1-163-038-00	CERAMIC	0.1uF	25V
C422	1-163-038-00	CERAMIC	0.1uF	25V
C423	1-163-038-00	CERAMIC	0.1uF	25V
C424	1-163-038-00	CERAMIC	0.1uF	25V
C425	1-163-038-00	CERAMIC	0.1uF	25V
C426	1-163-038-00	CERAMIC	0.1uF	25V
C427	1-163-038-00	CERAMIC	0.1uF	25V
C428	1-163-038-00	CERAMIC	0.1uF	25V
C429	1-163-038-00	CERAMIC	0.1uF	25V
C430	1-163-038-00	CERAMIC	0.1uF	25V
C431	1-163-038-00	CERAMIC	0.1uF	25V
C432	1-163-038-00	CERAMIC	0.1uF	25V
C433	1-163-038-00	CERAMIC	0.1uF	25V
C434	1-163-038-00	CERAMIC	0.1uF	25V
C435	1-163-038-00	CERAMIC	0.1uF	25V
C436	1-163-038-00	CERAMIC	0.1uF	25V
C437	1-163-038-00	CERAMIC	0.1uF	25V
C438	1-163-038-00	CERAMIC	0.1uF	25V
C439	1-163-038-00	CERAMIC	0.1uF	25V
C440	1-163-038-00	CERAMIC	0.1uF	25V
C441	1-163-038-00	CERAMIC	0.1uF	25V
C442	1-163-038-00	CERAMIC	0.1uF	25V
C447	1-163-038-00	CERAMIC	0.1uF	25V
C448	1-163-038-00	CERAMIC	0.1uF	25V
C449	1-163-038-00	CERAMIC	0.1uF	25V
C450	1-163-038-00	CERAMIC	0.1uF	25V
C451	1-163-038-00	CERAMIC	0.1uF	25V
C452	1-163-038-00	CERAMIC	0.1uF	25V
C453	1-163-038-00	CERAMIC	0.1uF	25V
C454	1-163-038-00	CERAMIC	0.1uF	25V
C455	1-163-038-00	CERAMIC	0.1uF	25V
C456	1-163-038-00	CERAMIC	0.1uF	25V
C457	1-163-038-00	CERAMIC	0.1uF	25V
C458	1-163-038-00	CERAMIC	0.1uF	25V
C459	1-163-038-00	CERAMIC	0.1uF	25V
C460	1-163-038-00	CERAMIC	0.1uF	25V
C461	1-163-038-00	CERAMIC	0.1uF	25V
C462	1-163-038-00	CERAMIC	0.1uF	25V
C463	1-163-038-00	CERAMIC	0.1uF	25V
C500	1-163-038-00	CERAMIC	0.1uF	25V
C501	1-163-038-00	CERAMIC	0.1uF	25V
C502	1-163-038-00	CERAMIC	0.1uF	25V
C503	1-163-038-00	CERAMIC	0.1uF	25V
C504	1-163-038-00	CERAMIC	0.1uF	25V
C505	1-163-038-00	CERAMIC	0.1uF	25V
C506	1-163-038-00	CERAMIC	0.1uF	25V
C507	1-163-038-00	CERAMIC	0.1uF	25V
C508	1-163-038-00	CERAMIC	0.1uF	25V
C509	1-163-038-00	CERAMIC	0.1uF	25V
C510	1-163-038-00	CERAMIC	0.1uF	25V
C511	1-163-038-00	CERAMIC	0.1uF	25V
C512	1-163-038-00	CERAMIC	0.1uF	25V
C513	1-163-038-00	CERAMIC	0.1uF	25V
C514	1-163-038-00	CERAMIC	0.1uF	25V
C515	1-163-038-00	CERAMIC	0.1uF	25V

Ref.No	Part No.	Description			Remark
C516	1-126-925-11	ELECT	470uF	20%	10V
C517	1-163-038-00	CERAMIC	0.1uF		25V
C520	1-163-038-00	CERAMIC	0.1uF		25V
C521	1-163-038-00	CERAMIC	0.1uF		25V
C522	1-163-038-00	CERAMIC	0.1uF		25V
C600	1-163-038-00	CERAMIC	0.1uF		25V
C601	1-163-038-00	CERAMIC	0.1uF		25V
C602	1-163-038-00	CERAMIC	0.1uF		25V
C603	1-163-038-00	CERAMIC	0.1uF		25V
C604	1-163-038-00	CERAMIC	0.1uF		25V
C605	1-163-038-00	CERAMIC	0.1uF		25V
C606	1-163-038-00	CERAMIC	0.1uF		25V
C607	1-163-038-00	CERAMIC	0.1uF		25V
C608	1-163-038-00	CERAMIC	0.1uF		25V
C609	1-163-038-00	CERAMIC	0.1uF		25V
C610	1-163-038-00	CERAMIC	0.1uF		25V
C611	1-163-038-00	CERAMIC	0.1uF		25V
C612	1-163-038-00	CERAMIC	0.1uF		25V
C613	1-163-038-00	CERAMIC	0.1uF		25V
C614	1-163-038-00	CERAMIC	0.1uF		25V
C615	1-163-038-00	CERAMIC	0.1uF		25V
C616	1-163-038-00	CERAMIC	0.1uF		25V
C617	1-163-038-00	CERAMIC	0.1uF		25V
C618	1-163-038-00	CERAMIC	0.1uF		25V
C702	1-135-157-21	TANTAL	10uF	20%	6.3V
C703	1-163-251-11	CERAMIC	100PF	5%	50V
C704	1-135-161-21	TANTAL	22uF	20%	6.3V
C705	1-126-925-11	ELECT	470uF	20%	10V
C706	1-163-038-00	CERAMIC	0.1uF		25V
C707	1-126-204-11	ELECT	47uF	20%	16V
C708	1-126-204-11	ELECT	47uF	20%	16V
C709	1-163-249-11	CERAMIC	82PF	5%	50V
C801	1-135-166-21	TANTAL	47uF	20%	10V
C802	1-135-164-21	TANTAL	22uF	20%	16V
C803	1-163-038-00	CERAMIC	0.1uF		25V
C804	1-135-070-00	TANTAL	0.1uF	20%	35V
C805	1-135-070-00	TANTAL	0.1uF	20%	35V
C806	1-163-038-00	CERAMIC	0.1uF		25V
C809	1-135-164-21	TANTAL	22uF	20%	16V
		<CONNECTOR>			
CN1	1-573-600-21	CONNECTOR, PC BOARD (PLUG) 100P			
CN2	1-573-600-21	CONNECTOR, PC BOARD (PLUG) 100P			
CN3	*1-573-782-21	CONNECTOR, PC BOARD (PLUG) 60P			
		<DIODE>			
D2	8-719-801-78	DIODE 1S2837-T1			
D3	8-719-157-36	DIODE RD6.8M-B			
D4	8-719-157-36	DIODE RD6.8M-B			
D5	8-719-157-36	DIODE RD6.8M-B			
D6	8-719-157-36	DIODE RD6.8M-B			
D101	8-719-105-51	DIODE RD3.6M-B1			
D201	8-719-105-51	DIODE RD3.6M-B1			
D301	8-719-105-51	DIODE RD3.6M-B1			
D701	8-719-800-76	DIODE 1SS226			
		<FUSE>			
F1	⚠1-532-748-11	FUSE, GLASS TUBE			
		<FILTER>			
FL1	1-421-773-11	FILTER, NOISE REMOVAL			
FL101	1-239-287-11	FILTER, LOW PASS			
FL201	1-239-287-11	FILTER, LOW PASS			
FL301	1-239-287-11	FILTER, LOW PASS			

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Ref.No	Part No.	Description	Remark
		<IC>	
IC1	8-759-701-75	IC NJM7805FA	
IC2	8-759-701-87	IC NJM7909FA	
IC3	8-759-515-09	IC SN74ALS374ANS	
IC4	8-759-515-09	IC SN74ALS374ANS	
IC5	8-759-980-27	IC SN74ALS163BNS	
IC6	8-759-980-27	IC SN74ALS163BNS	
IC7	8-759-934-08	IC SN74ALS27NS	
IC8	8-759-934-11	IC SN74ALS32NS	
IC9	8-759-925-74	IC SN74HC04ANS	
IC10	8-759-926-48	IC SN74HC244ANS	
IC11	8-759-926-48	IC SN74HC244ANS	
IC12	8-759-926-48	IC SN74HC244ANS	
IC13	8-759-926-48	IC SN74HC244ANS	
IC15	8-759-154-50	IC CXD8301Q	
IC16	8-759-926-48	IC SN74HC244ANS	
IC17	8-759-926-11	IC SN74HC138ANS	
IC18	8-759-926-11	IC SN74HC138ANS	
IC19	8-759-926-67	IC SN74HC374ANS	
IC20	8-759-926-67	IC SN74HC374ANS	
IC21	8-759-926-48	IC SN74HC244ANS	
IC22	8-759-926-67	IC SN74HC374ANS	
IC23	8-759-075-29	IC CY7C291A-35PC-A03	
IC24	8-759-515-09	IC SN74ALS374ANS	
IC25	8-759-925-90	IC SN74HC74ANS	
IC26	8-759-925-90	IC SN74HC74ANS	
IC27	8-759-925-76	IC SN74HC08ANS	
IC28	8-759-927-46	IC SN74HC00ANS	
IC29	8-759-925-85	IC SN74HC32ANS	
IC30	8-759-925-74	IC SN74HC04ANS	
IC31	8-759-926-48	IC SN74HC244ANS2	
IC32	8-759-989-56	IC SN74ALS244BNS-T1	
IC33	8-759-989-56	IC SN74ALS244BNS-T1	
IC34	8-759-926-24	IC SN74HC164ANS2	
IC35	8-759-926-50	IC SN74HC251ANS	
IC36	8-759-926-67	IC SN74HC374ANS2	
IC37	8-759-239-58	IC TC74HC221AF	
IC101	8-752-053-26	IC CXA1399Q	
IC102	8-752-060-50	IC CXA1577R	
IC103	8-759-515-09	IC SN74ALS374ANS	
IC104	8-759-515-09	IC SN74ALS374ANS	
IC105	8-759-258-96	IC CY7C128A-25VCTEL	
IC106	8-759-934-54	IC SN74ALS273NS	
IC107	8-759-515-09	IC SN74ALS374ANS	
IC108	8-759-515-09	IC SN74ALS374ANS	
IC109	8-759-989-56	IC SN74ALS244BNS	
IC110	8-759-934-54	IC SN74ALS273NS	
IC111	8-759-033-52	IC MC74F283M	
IC112	8-759-934-54	IC SN74ALS273NS	
IC113	8-759-033-52	IC MC74F283M	
IC114	8-759-515-09	IC SN74ALS374ANS	
IC115	8-759-515-09	IC SN74ALS374ANS	
IC116	8-759-934-54	IC SN74ALS273NS	
IC122	8-759-985-54	IC 74AC244SJ	
IC124	8-759-989-56	IC SN74ALS244BNS	
IC125	8-759-989-56	IC SN74ALS244BNS	
IC126	8-759-925-74	IC SN74HC04ANS	
IC127	8-759-925-74	IC SN74HC04ANS	
IC128	8-759-925-85	IC SN74HC32ANS	
IC130	8-759-515-09	IC SN74ALS374ANS	
IC131	8-759-258-96	IC CY7C128A-25VCTEL	
IC132	8-759-515-09	IC SN74ALS374ANS	
IC133	8-759-926-48	IC SN74HC244ANS	
IC134	8-759-926-48	IC SN74HC244ANS	
IC135	8-759-515-09	IC SN74ALS374ANS	
IC201	8-752-053-26	IC CXA1399Q	
IC202	8-752-060-50	IC CXA1577R	
IC203	8-759-515-09	IC SN74ALS374ANS	
IC204	8-759-515-09	IC SN74ALS374ANS	
IC205	8-759-258-96	IC CY7C128A-25VCTEL	
IC206	8-759-934-54	IC SN74ALS273NS	
IC207	8-759-515-09	IC SN74ALS374ANS	
IC208	8-759-515-09	IC SN74ALS374ANS	
IC209	8-759-989-56	IC SN74ALS244BNS	
IC210	8-759-934-54	IC SN74ALS273NS	
IC211	8-759-033-52	IC MC74F283M	
IC212	8-759-934-54	IC SN74ALS273NS	
IC213	8-759-033-52	IC MC74F283M	
IC214	8-759-515-09	IC SN74ALS374ANS	
IC215	8-759-515-09	IC SN74ALS374ANS	
IC216	8-759-934-54	IC SN74ALS273NS	
IC222	8-759-985-54	IC 74AC244SJ	
IC224	8-759-989-56	IC SN74ALS244BNS1	
IC225	8-759-989-56	IC SN74ALS244BNS1	
IC230	8-759-515-09	IC SN74ALS374ANS	
IC231	8-759-258-96	IC CY7C128A-25VCTEL	
IC232	8-759-515-09	IC SN74ALS374ANS	
IC233	8-759-926-48	IC SN74HC244ANS	
IC234	8-759-926-48	IC SN74HC244ANS	
IC235	8-759-515-09	IC SN74ALS374ANS	
IC301	8-752-053-26	IC CXA1399Q	
IC302	8-752-060-50	IC CXA1577R	
IC303	8-759-515-09	IC SN74ALS374ANS	
IC304	8-759-515-09	IC SN74ALS374ANS	
IC305	8-759-258-96	IC CY7C128A-25VCTEL	
IC306	8-759-934-54	IC SN74ALS273NS	
IC307	8-759-515-09	IC SN74ALS374ANS	
IC308	8-759-515-09	IC SN74ALS374ANS	
IC309	8-759-989-56	IC SN74ALS244BNS	
IC310	8-759-934-54	IC SN74ALS273NS	
IC311	8-759-033-52	IC MC74F283M	
IC312	8-759-934-54	IC SN74ALS273NS	
IC313	8-759-033-52	IC MC74F283M	
IC314	8-759-515-09	IC SN74ALS374ANS	
IC315	8-759-515-09	IC SN74ALS374ANS	
IC316	8-759-934-54	IC SN74ALS273NS	
IC322	8-759-985-54	IC 74AC244SJ	
IC324	8-759-989-56	IC SN74ALS244BNS	
IC325	8-759-989-56	IC SN74ALS244BNS	
IC330	8-759-515-09	IC SN74ALS374ANS	
IC331	8-759-258-96	IC CY7C128A-25VCTEL	
IC332	8-759-515-09	IC SN74ALS374ANS	
IC333	8-759-926-48	IC SN74HC244ANS	
IC334	8-759-926-48	IC SN74HC244ANS	
IC335	8-759-515-09	IC SN74ALS374ANS	
IC400	8-752-362-51	IC CXD207-105Q	
IC401	8-759-008-31	IC MC74HC4002F	
IC402	8-759-926-12	IC SN74HC139ANS	
IC403	8-759-987-92	IC SN74ALS10ANS	
IC404	8-759-987-92	IC SN74ALS10ANS	
IC405	8-759-933-92	IC SN74ALS00ANS	
IC406	8-759-933-92	IC SN74ALS00ANS	
IC407	8-759-987-92	IC SN74ALS10ANS	
IC408	8-759-987-92	IC SN74ALS10ANS	
IC409	8-759-987-92	IC SN74ALS10ANS	
IC410	8-759-987-92	IC SN74ALS10ANS	
IC411	8-759-987-92	IC SN74ALS10ANS	
IC412	8-759-987-92	IC SN74ALS10ANS	

Ref.No	Part No.	Description	Remark
IC413	8-759-987-92	IC SN74ALS10ANS	
IC414	8-759-987-92	IC SN74ALS10ANS	
IC415	8-759-987-92	IC SN74ALS10ANS	
IC416	8-759-987-92	IC SN74ALS10ANS	
IC417	8-759-987-92	IC SN74ALS10ANS	
IC418	8-759-934-08	IC SN74ALS27NS	
IC419	8-759-934-08	IC SN74ALS27NS	
IC420	8-759-934-08	IC SN74ALS27NS	
IC421	8-759-933-94	IC SN74ALS02NS	
IC422	8-759-933-94	IC SN74ALS02NS	
IC423	8-759-933-92	IC SN74ALS00ANS	
IC424	8-759-933-98	IC SN74ALS08NS	
IC425	8-759-987-92	IC SN74ALS10ANS	
IC426	8-759-933-94	IC SN74ALS02NS	
IC427	8-759-946-65	IC SN74ALS04BNS	
IC428	8-759-946-65	IC SN74ALS04BNS	
IC429	8-759-989-56	IC SN74ALS244BNS	
IC430	8-759-933-98	IC SN74ALS08NS	
IC431	8-759-933-98	IC SN74ALS08NS	
IC432	8-759-933-98	IC SN74ALS08NS	
IC433	8-759-933-98	IC SN74ALS08NS	
IC434	8-759-933-98	IC SN74ALS08NS	
IC435	8-759-933-98	IC SN74ALS08NS	
IC436	8-759-989-56	IC SN74ALS244BNS	
IC437	8-759-933-98	IC SN74ALS08NS	
IC438	8-759-933-98	IC SN74ALS08NS	
IC439	8-759-933-98	IC SN74ALS08NS	
IC440	8-759-933-98	IC SN74ALS08NS	
IC441	8-759-933-98	IC SN74ALS08NS	
IC442	8-759-933-98	IC SN74ALS08NS	
IC447	8-759-926-67	IC SN74HC374ANS	
IC448	8-759-946-65	IC SN74ALS04BNS	
IC449	8-759-934-08	IC SN74ALS27NS	
IC450	8-759-934-08	IC SN74ALS27NS	
IC451	8-759-934-08	IC SN74ALS27NS	
IC452	8-759-989-56	IC SN74ALS244BNS	
IC453	8-759-989-56	IC SN74ALS244BNS	
IC454	8-759-989-56	IC SN74ALS244BNS	
IC455	8-759-989-56	IC SN74ALS244BNS	
IC456	8-759-989-56	IC SN74ALS244BNS	
IC500	8-759-256-51	IC MB818251-70PZS	
IC501	8-759-256-51	IC MB818251-70PZS	
IC502	8-759-256-51	IC MB818251-70PZS	
IC503	8-759-256-51	IC MB818251-70PZS	
IC504	8-759-256-51	IC MB818251-70PZS	
IC505	8-759-256-51	IC MB818251-70PZS	
IC506	8-759-515-09	IC SN74ALS374ANS	
IC507	8-759-515-09	IC SN74ALS374ANS	
IC508	8-759-515-09	IC SN74ALS374ANS	
IC509	8-759-926-48	IC SN74HC244ANS	
IC510	8-759-926-48	IC SN74HC244ANS	
IC520	8-759-989-56	IC SN74ALS244BNS	
IC521	8-759-989-56	IC SN74ALS244BNS	
IC522	8-759-989-56	IC SN74ALS244BNS	
IC600	8-759-256-51	IC MB818251-70PZS	
IC601	8-759-256-51	IC MB818251-70PZS	
IC602	8-759-256-51	IC MB818251-70PZS	
IC603	8-759-256-51	IC MB818251-70PZS	
IC604	8-759-256-51	IC MB818251-70PZS	
IC605	8-759-256-51	IC MB818251-70PZS	
IC606	8-759-515-09	IC SN74ALS374ANS	
IC607	8-759-515-09	IC SN74ALS374ANS	
IC608	8-759-515-09	IC SN74ALS374ANS	
IC609	8-759-989-56	IC SN74ALS244BNS	

Ref.No	Part No.	Description	Remark
IC610	8-759-989-56	IC SN74ALS244BNS	
IC611	8-759-989-56	IC SN74ALS244BNS	
IC612	8-759-926-48	IC SN74HC244ANS	
IC702	8-759-937-54	IC S-81250HG-RD-S	
IC801	8-752-338-46	IC CXD1178Q	
		<INDUCTOR>	
L1	1-421-904-11	COIL, CHOKE 47UH	
L2	1-421-904-11	COIL, CHOKE 47UH	
L101	1-421-904-11	COIL, CHOKE 47UH	
L102	1-421-904-11	COIL, CHOKE 47UH	
L103	1-408-777-00	INDUCTOR CHIP 10UH	
L104	1-408-777-00	INDUCTOR CHIP 10UH	
L105	1-421-904-11	COIL, CHOKE 47UH	
L106	1-421-904-11	COIL, CHOKE 47UH	
L201	1-421-904-11	COIL, CHOKE 47UH	
L202	1-421-904-11	COIL, CHOKE 47UH	
L203	1-408-777-00	INDUCTOR CHIP 10UH	
L204	1-408-777-00	INDUCTOR CHIP 10UH	
L205	1-421-904-11	COIL, CHOKE 47UH	
L206	1-421-904-11	COIL, CHOKE 47UH	
L301	1-421-904-11	COIL, CHOKE 47UH	
L302	1-421-904-11	COIL, CHOKE 47UH	
L303	1-408-777-00	INDUCTOR CHIP 10UH	
L304	1-408-777-00	INDUCTOR CHIP 10UH	
L305	1-421-904-11	COIL, CHOKE 47UH	
L306	1-421-904-11	COIL, CHOKE 47UH	
L701	1-421-904-11	COIL, CHOKE 47UH	
L801	1-421-904-11	COIL, CHOKE 47UH	
		<TRANSISTOR>	
Q1	8-729-200-86	TRANSISTOR 2SC2714-0	
Q2	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q3	8-729-200-86	TRANSISTOR 2SC2714-0	
Q4	8-729-200-86	TRANSISTOR 2SC2714-0	
Q5	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q6	8-729-200-86	TRANSISTOR 2SC2714-0	
Q7	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q8	8-729-200-86	TRANSISTOR 2SC2714-0	
Q9	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q101	8-729-200-86	TRANSISTOR 2SC2714-0	
Q102	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q103	8-729-200-86	TRANSISTOR 2SC2714-0	
Q104	8-729-200-86	TRANSISTOR 2SC2714-0	
Q105	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q106	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q107	8-729-200-86	TRANSISTOR 2SC2714-0	
Q108	8-729-200-86	TRANSISTOR 2SC2714-0	
Q109	8-729-200-86	TRANSISTOR 2SC2714-0	
Q110	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q111	8-729-200-86	TRANSISTOR 2SC2714-0	
Q112	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q113	8-729-200-86	TRANSISTOR 2SC2714-0	
Q114	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q115	8-729-109-44	TRANSISTOR 2SK94-X4	
Q123	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q124	8-729-200-86	TRANSISTOR 2SC2714-0	
Q125	8-729-200-86	TRANSISTOR 2SC2714-0	
Q126	8-729-200-86	TRANSISTOR 2SC2714-0	
Q127	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q128	8-729-200-86	TRANSISTOR 2SC2714-0	
Q129	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q130	8-729-200-86	TRANSISTOR 2SC2714-0	
Q131	8-729-122-63	TRANSISTOR 2SA1226-E4	

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Ref.No	Part No.	Description	Remark
Q132	8-729-200-86	TRANSISTOR 2SC2714-0	
Q133	8-729-200-86	TRANSISTOR 2SC2714-0	
Q134	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q135	8-729-200-86	TRANSISTOR 2SC2714-0	
Q136	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q137	8-729-200-86	TRANSISTOR 2SC2714-0	
Q138	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q201	8-729-200-86	TRANSISTOR 2SC2714-0	
Q202	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q203	8-729-200-86	TRANSISTOR 2SC2714-0	
Q204	8-729-200-86	TRANSISTOR 2SC2714-0	
Q205	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q206	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q207	8-729-200-86	TRANSISTOR 2SC2714-0	
Q208	8-729-200-86	TRANSISTOR 2SC2714-0	
Q209	8-729-200-86	TRANSISTOR 2SC2714-0	
Q210	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q211	8-729-200-86	TRANSISTOR 2SC2714-0	
Q212	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q213	8-729-200-86	TRANSISTOR 2SC2714-0	
Q214	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q215	8-729-109-44	TRANSISTOR 2SK94-X4	
Q223	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q224	8-729-200-86	TRANSISTOR 2SC2714-0	
Q225	8-729-200-86	TRANSISTOR 2SC2714-0	
Q226	8-729-200-86	TRANSISTOR 2SC2714-0	
Q227	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q228	8-729-200-86	TRANSISTOR 2SC2714-0	
Q229	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q230	8-729-200-86	TRANSISTOR 2SC2714-0	
Q231	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q232	8-729-200-86	TRANSISTOR 2SC2714-0	
Q233	8-729-200-86	TRANSISTOR 2SC2714-0	
Q234	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q235	8-729-200-86	TRANSISTOR 2SC2714-0	
Q236	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q237	8-729-200-86	TRANSISTOR 2SC2714-0	
Q238	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q301	8-729-200-86	TRANSISTOR 2SC2714-0	
Q302	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q303	8-729-200-86	TRANSISTOR 2SC2714-0	
Q304	8-729-200-86	TRANSISTOR 2SC2714-0	
Q305	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q306	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q307	8-729-200-86	TRANSISTOR 2SC2714-0	
Q308	8-729-200-86	TRANSISTOR 2SC2714-0	
Q309	8-729-200-86	TRANSISTOR 2SC2714-0	
Q310	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q311	8-729-200-86	TRANSISTOR 2SC2714-0	
Q312	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q313	8-729-200-86	TRANSISTOR 2SC2714-0	
Q314	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q315	8-729-109-44	TRANSISTOR 2SK94-X4	
Q323	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q324	8-729-200-86	TRANSISTOR 2SC2714-0	
Q325	8-729-200-86	TRANSISTOR 2SC2714-0	
Q326	8-729-200-86	TRANSISTOR 2SC2714-0	
Q327	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q328	8-729-200-86	TRANSISTOR 2SC2714-0	
Q329	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q330	8-729-200-86	TRANSISTOR 2SC2714-0	
Q331	8-729-122-63	TRANSISTOR 2SA1226-E4	
Q332	8-729-200-86	TRANSISTOR 2SC2714-0	
Q333	8-729-200-86	TRANSISTOR 2SC2714-0	

Ref.No	Part No.	Description				Remark
Q334	8-729-122-63	TRANSISTOR 2SA1226-E4				
Q335	8-729-200-86	TRANSISTOR 2SC2714-0				
Q336	8-729-122-63	TRANSISTOR 2SA1226-E4				
Q337	8-729-200-86	TRANSISTOR 2SC2714-0				
Q338	8-729-122-63	TRANSISTOR 2SA1226-E4				
Q701	8-729-120-28	TRANSISTOR 2SC1623-L5L6				
Q702	8-729-120-28	TRANSISTOR 2SC1623-L5L6				
Q703	8-729-216-22	TRANSISTOR 2SA1162-G				
Q704	8-729-216-22	TRANSISTOR 2SA1162-G				
		<RESISTOR>				
R1	1-217-210-11	WIREWOUND	6.8	10%	2W	
R2	1-217-210-11	WIREWOUND	6.8	10%	2W	
R3	1-217-210-11	WIREWOUND	6.8	10%	2W	
R4	1-216-049-00	METAL	1K	5%	1/10W	
R5	1-216-679-11	METAL	15K	0.50%	1/10W	
R6	1-216-627-11	METAL	100	0.50%	1/10W	
R7	1-216-667-11	METAL	4.7K	0.50%	1/10W	
R8	1-216-645-11	METAL	560	0.50%	1/10W	
R9	1-216-607-11	METAL	15	0.50%	1/10W	
R10	1-216-631-11	METAL	150	0.50%	1/10W	
R11	1-216-651-11	METAL	1K	0.50%	1/10W	
R12	1-216-671-11	METAL	6.8K	0.50%	1/10W	
R13	1-216-651-11	METAL	1K	0.50%	1/10W	
R14	1-216-651-11	METAL	1K	0.50%	1/10W	
R15	1-216-657-11	METAL	1.8K	0.50%	1/10W	
R16	1-216-309-00	METAL	5.6	5%	1/10W	
R17	1-216-309-00	METAL	5.6	5%	1/10W	
R18	1-216-097-00	METAL	100K	5%	1/10W	
R19	1-216-643-11	METAL	470	0.50%	1/10W	
R20	1-216-607-11	METAL	15	0.50%	1/10W	
R21	1-216-635-11	METAL	220	0.50%	1/10W	
R22	1-216-613-11	METAL	27	0.50%	1/10W	
R23	1-216-654-11	METAL	1.3K	0.50%	1/10W	
R24	1-216-613-11	METAL	27	0.50%	1/10W	
R25	1-216-097-00	METAL	100K	5%	1/10W	
R26	1-216-097-00	METAL	100K	5%	1/10W	
R27	1-216-097-00	METAL	100K	5%	1/10W	
R28	1-216-097-00	METAL	100K	5%	1/10W	
R29	1-216-097-00	METAL	100K	5%	1/10W	
R30	1-216-097-00	METAL	100K	5%	1/10W	
R31	1-216-097-00	METAL	100K	5%	1/10W	
R32	1-216-097-00	METAL	100K	5%	1/10W	
R33	1-216-097-00	METAL	100K	5%	1/10W	
R34	1-216-097-00	METAL	100K	5%	1/10W	
R35	1-216-097-00	METAL	100K	5%	1/10W	
R36	1-216-073-00	METAL	10K	5%	1/10W	
R37	1-216-073-00	METAL	10K	5%	1/10W	
R38	1-216-073-00	METAL	10K	5%	1/10W	
R39	1-216-073-00	METAL	10K	5%	1/10W	
R40	1-216-073-00	METAL	10K	5%	1/10W	
R41	1-216-073-00	METAL	10K	5%	1/10W	
R42	1-216-073-00	METAL	10K	5%	1/10W	
R43	1-216-073-00	METAL	10K	5%	1/10W	
R44	1-216-073-00	METAL	10K	5%	1/10W	
R45	1-216-073-00	METAL	10K	5%	1/10W	
R46	1-216-073-00	METAL	10K	5%	1/10W	
R47	1-216-073-00	METAL	10K	5%	1/10W	
R48	1-216-073-00	METAL	10K	5%	1/10W	
R49	1-216-073-00	METAL	10K	5%	1/10W	
R50	1-216-073-00	METAL	10K	5%	1/10W	
R51	1-216-073-00	METAL	10K	5%	1/10W	
R52	1-216-073-00	METAL	10K	5%	1/10W	
R53	1-216-073-00	METAL	10K	5%	1/10W	

Ref.No	Part No.	Description			Remark
R54	1-216-073-00	METAL	10K	5%	1/10W
R56	1-216-073-00	METAL	10K	5%	1/10W
R57	1-216-073-00	METAL	10K	5%	1/10W
R58	1-216-073-00	METAL	10K	5%	1/10W
R59	1-216-073-00	METAL	10K	5%	1/10W
R60	1-216-097-00	METAL	100K	5%	1/10W
R61	1-216-097-00	METAL	100K	5%	1/10W
R62	1-216-097-00	METAL	100K	5%	1/10W
R63	1-216-097-00	METAL	100K	5%	1/10W
R64	1-216-097-00	METAL	100K	5%	1/10W
R65	1-216-097-00	METAL	100K	5%	1/10W
R66	1-216-097-00	METAL	100K	5%	1/10W
R67	1-216-097-00	METAL	100K	5%	1/10W
R68	1-216-097-00	METAL	100K	5%	1/10W
R69	1-216-097-00	METAL	100K	5%	1/10W
R70	1-216-097-00	METAL	100K	5%	1/10W
R72	1-216-073-00	METAL	10K	5%	1/10W
R74	1-216-073-00	METAL	10K	5%	1/10W
R75	1-216-073-00	METAL	10K	5%	1/10W
R76	1-216-097-00	METAL	100K	5%	1/10W
R77	1-216-097-00	METAL	100K	5%	1/10W
R78	1-216-097-00	METAL	100K	5%	1/10W
R79	1-216-097-00	METAL	100K	5%	1/10W
R80	1-216-097-00	METAL	100K	5%	1/10W
R101	1-216-624-11	METAL	75	0.50%	1/10W
R102	1-216-605-11	METAL	12	0.50%	1/10W
R103	1-216-653-11	METAL	1.2K	0.50%	1/10W
R104	1-216-611-11	METAL	22	0.50%	1/10W
R105	1-216-675-11	METAL	10K	0.50%	1/10W
R106	1-216-627-11	METAL	100	0.50%	1/10W
R107	1-216-651-11	METAL	1K	0.50%	1/10W
R108	1-216-667-11	METAL	4.7K	0.50%	1/10W
R109	1-216-683-11	METAL	22K	0.50%	1/10W
R110	1-216-675-11	METAL	10K	0.50%	1/10W
R111	1-216-661-11	METAL	2.7K	0.50%	1/10W
R112	1-216-661-11	METAL	2.7K	0.50%	1/10W
R113	1-216-653-11	METAL	1.2K	0.50%	1/10W
R114	1-216-673-11	METAL	8.2K	0.50%	1/10W
R115	1-216-661-11	METAL	2.7K	0.50%	1/10W
R116	1-216-675-11	METAL	10K	0.50%	1/10W
R117	1-216-651-11	METAL	1K	0.50%	1/10W
R118	1-216-657-11	METAL	1.8K	0.50%	1/10W
R119	1-216-679-11	METAL	15K	0.50%	1/10W
R120	1-216-650-11	METAL	910	0.50%	1/10W
R121	1-216-651-11	METAL	1K	0.50%	1/10W
R122	1-216-647-11	METAL	680	0.50%	1/10W
R123	1-216-651-11	METAL	1K	0.50%	1/10W
R124	1-216-665-11	METAL	3.9K	0.50%	1/10W
R125	1-216-657-11	METAL	1.8K	0.50%	1/10W
R126	1-216-309-00	METAL	5.6	5%	1/10W
R127	1-216-309-00	METAL	5.6	5%	1/10W
R128	1-216-650-11	METAL	910	0.50%	1/10W
R129	1-216-627-11	METAL	100	0.50%	1/10W
R130	1-216-647-11	METAL	680	0.50%	1/10W
R131	1-216-649-11	METAL	820	0.50%	1/10W
R132	1-216-663-11	METAL	3.3K	0.50%	1/10W
R133	1-216-627-11	METAL	100	0.50%	1/10W
R134	1-216-681-11	METAL	18K	0.50%	1/10W
R135	1-216-675-11	METAL	10K	0.50%	1/10W
R136	1-216-073-00	METAL	10K	5%	1/10W
R137	1-216-073-00	METAL	10K	5%	1/10W
R138	1-216-073-00	METAL	10K	5%	1/10W
R139	1-216-073-00	METAL	10K	5%	1/10W
R140	1-216-073-00	METAL	10K	5%	1/10W
R141	1-216-073-00	METAL	10K	5%	1/10W
R142	1-216-073-00	METAL	10K	5%	1/10W
R143	1-216-073-00	METAL	10K	5%	1/10W
R144	1-216-619-11	METAL	47	0.50%	1/10W
R145	1-216-611-11	METAL	22	0.50%	1/10W
R146	1-216-295-00	METAL	0	5%	1/10W
R147	1-216-049-00	METAL	1K	5%	1/10W
R148	1-216-049-00	METAL	1K	5%	1/10W
R149	1-216-049-00	METAL	1K	5%	1/10W
R150	1-216-049-00	METAL	1K	5%	1/10W
R151	1-216-049-00	METAL	1K	5%	1/10W
R152	1-216-049-00	METAL	1K	5%	1/10W
R153	1-216-049-00	METAL	1K	5%	1/10W
R154	1-216-049-00	METAL	1K	5%	1/10W
R155	1-216-097-00	METAL	100K	5%	1/10W
R157	1-216-685-11	METAL	27K	0.50%	1/10W
R158	1-216-647-11	METAL	680	0.50%	1/10W
R160	1-216-634-11	METAL	200	0.50%	1/10W
R161	1-216-627-11	METAL	100	0.50%	1/10W
R162	1-216-655-11	METAL	1.5K	0.50%	1/10W
R163	1-216-651-11	METAL	1K	0.50%	1/10W
R164	1-216-651-11	METAL	1K	0.50%	1/10W
R165	1-216-663-11	METAL	3.3K	0.50%	1/10W
R166	1-216-644-11	METAL	510	0.50%	1/10W
R167	1-216-651-11	METAL	1K	0.50%	1/10W
R168	1-216-647-11	METAL	680	0.50%	1/10W
R169	1-216-665-11	METAL	3.9K	0.50%	1/10W
R170	1-216-627-11	METAL	100	0.50%	1/10W
R171	1-216-683-11	METAL	22K	0.50%	1/10W
R172	1-216-657-11	METAL	1.8K	0.50%	1/10W
R173	1-216-309-00	METAL	5.6	5%	1/10W
R174	1-216-309-00	METAL	5.6	5%	1/10W
R175	1-216-651-11	METAL	1K	0.50%	1/10W
R176	1-216-645-11	METAL	560	0.50%	1/10W
R177	1-216-651-11	METAL	1K	0.50%	1/10W
R178	1-216-665-11	METAL	3.9K	0.50%	1/10W
R179	1-216-647-11	METAL	680	0.50%	1/10W
R180	1-216-651-11	METAL	1K	0.50%	1/10W
R181	1-216-657-11	METAL	1.8K	0.50%	1/10W
R182	1-216-309-00	METAL	5.6	5%	1/10W
R183	1-216-309-00	METAL	5.6	5%	1/10W
R184	1-216-651-11	METAL	1K	0.50%	1/10W
R185	1-216-624-11	METAL	75	0.50%	1/10W
R190	1-216-674-11	METAL	9.1K	0.50%	1/10W
R201	1-216-624-11	METAL	75	0.50%	1/10W
R202	1-216-605-11	METAL	12	0.50%	1/10W
R203	1-216-653-11	METAL	1.2K	0.50%	1/10W
R204	1-216-611-11	METAL	22	0.50%	1/10W
R205	1-216-675-11	METAL	10K	0.50%	1/10W
R206	1-216-627-11	METAL	100	0.50%	1/10W
R207	1-216-651-11	METAL	1K	0.50%	1/10W
R208	1-216-667-11	METAL	4.7K	0.50%	1/10W
R209	1-216-683-11	METAL	22K	0.50%	1/10W
R210	1-216-675-11	METAL	10K	0.50%	1/10W
R211	1-216-661-11	METAL	2.7K	0.50%	1/10W
R212	1-216-661-11	METAL	2.7K	0.50%	1/10W
R213	1-216-653-11	METAL	1.2K	0.50%	1/10W
R214	1-216-673-11	METAL	8.2K	0.50%	1/10W
R215	1-216-661-11	METAL	2.7K	0.50%	1/10W
R216	1-216-675-11	METAL	10K	0.50%	1/10W
R217	1-216-651-11	METAL	1K	0.50%	1/10W
R218	1-216-657-11	METAL	1.8K	0.50%	1/10W
R219	1-216-679-11	METAL	15K	0.50%	1/10W
R220	1-216-650-11	METAL	910	0.50%	1/10W

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Ref.No	Part No.	Description			Remark
R221	1-216-651-11	METAL	1K	0.50%	1/10W
R222	1-216-647-11	METAL	680	0.50%	1/10W
R223	1-216-651-11	METAL	1K	0.50%	1/10W
R224	1-216-665-11	METAL	3.9K	0.50%	1/10W
R225	1-216-657-11	METAL	1.8K	0.50%	1/10W
R226	1-216-309-00	METAL	5.6	5%	1/10W
R227	1-216-309-00	METAL	5.6	5%	1/10W
R228	1-216-650-11	METAL	910	0.50%	1/10W
R229	1-216-627-11	METAL	100	0.50%	1/10W
R230	1-216-647-11	METAL	680	0.50%	1/10W
R231	1-216-649-11	METAL	820	0.50%	1/10W
R232	1-216-663-11	METAL	3.3K	0.50%	1/10W
R233	1-216-627-11	METAL	100	0.50%	1/10W
R234	1-216-681-11	METAL	18K	0.50%	1/10W
R235	1-216-675-11	METAL	10K	0.50%	1/10W
R236	1-216-073-00	METAL	10K	5%	1/10W
R237	1-216-073-00	METAL	10K	5%	1/10W
R238	1-216-073-00	METAL	10K	5%	1/10W
R239	1-216-073-00	METAL	10K	5%	1/10W
R240	1-216-073-00	METAL	10K	5%	1/10W
R241	1-216-073-00	METAL	10K	5%	1/10W
R242	1-216-073-00	METAL	10K	5%	1/10W
R243	1-216-073-00	METAL	10K	5%	1/10W
R244	1-216-619-11	METAL	47	0.50%	1/10W
R245	1-216-611-11	METAL	22	0.50%	1/10W
R246	1-216-295-00	METAL	0	5%	1/10W
R247	1-216-049-00	METAL	1K	5%	1/10W
R248	1-216-049-00	METAL	1K	5%	1/10W
R249	1-216-049-00	METAL	1K	5%	1/10W
R250	1-216-049-00	METAL	1K	5%	1/10W
R251	1-216-049-00	METAL	1K	5%	1/10W
R252	1-216-049-00	METAL	1K	5%	1/10W
R253	1-216-049-00	METAL	1K	5%	1/10W
R254	1-216-049-00	METAL	1K	5%	1/10W
R255	1-216-097-00	METAL	100K	5%	1/10W
R256	1-216-097-00	METAL	100K	5%	1/10W
R257	1-216-685-11	METAL	27K	0.50%	1/10W
R258	1-216-647-11	METAL	680	0.50%	1/10W
R260	1-216-634-11	METAL	200	0.50%	1/10W
R261	1-216-627-11	METAL	100	0.50%	1/10W
R262	1-216-655-11	METAL	1.5K	0.50%	1/10W
R263	1-216-651-11	METAL	1K	0.50%	1/10W
R264	1-216-651-11	METAL	1K	0.50%	1/10W
R265	1-216-663-11	METAL	3.3K	0.50%	1/10W
R266	1-216-644-11	METAL	510	0.50%	1/10W
R267	1-216-651-11	METAL	1K	0.50%	1/10W
R268	1-216-647-11	METAL	680	0.50%	1/10W
R269	1-216-665-11	METAL	3.9K	0.50%	1/10W
R270	1-216-627-11	METAL	100	0.50%	1/10W
R271	1-216-683-11	METAL	22K	0.50%	1/10W
R272	1-216-657-11	METAL	1.8K	0.50%	1/10W
R273	1-216-309-00	METAL	5.6	5%	1/10W
R274	1-216-309-00	METAL	5.6	5%	1/10W
R275	1-216-651-11	METAL	1K	0.50%	1/10W
R276	1-216-645-11	METAL	560	0.50%	1/10W
R277	1-216-651-11	METAL	1K	0.50%	1/10W
R278	1-216-665-11	METAL	3.9K	0.50%	1/10W
R279	1-216-647-11	METAL	680	0.50%	1/10W
R280	1-216-651-11	METAL	1K	0.50%	1/10W
R281	1-216-657-11	METAL	1.8K	0.50%	1/10W
R282	1-216-309-00	METAL	5.6	5%	1/10W
R283	1-216-309-00	METAL	5.6	5%	1/10W
R284	1-216-651-11	METAL	1K	0.50%	1/10W
R285	1-216-624-11	METAL	75	0.50%	1/10W

Ref.No	Part No.	Description			Remark
R286	1-216-041-00	METAL	470	5%	1/10W
R290	1-216-674-11	METAL	9.1K	0.50%	1/10W
R301	1-216-624-11	METAL	75	0.50%	1/10W
R302	1-216-605-11	METAL	12	0.50%	1/10W
R303	1-216-653-11	METAL	1.2K	0.50%	1/10W
R304	1-216-611-11	METAL	22	0.50%	1/10W
R305	1-216-675-11	METAL	10K	0.50%	1/10W
R306	1-216-627-11	METAL	100	0.50%	1/10W
R307	1-216-651-11	METAL	1K	0.50%	1/10W
R308	1-216-667-11	METAL	4.7K	0.50%	1/10W
R309	1-216-683-11	METAL	22K	0.50%	1/10W
R310	1-216-675-11	METAL	10K	0.50%	1/10W
R311	1-216-661-11	METAL	2.7K	0.50%	1/10W
R312	1-216-661-11	METAL	2.7K	0.50%	1/10W
R313	1-216-653-11	METAL	1.2K	0.50%	1/10W
R314	1-216-673-11	METAL	8.2K	0.50%	1/10W
R315	1-216-661-11	METAL	2.7K	0.50%	1/10W
R316	1-216-675-11	METAL	10K	0.50%	1/10W
R317	1-216-651-11	METAL	1K	0.50%	1/10W
R318	1-216-657-11	METAL	1.8K	0.50%	1/10W
R319	1-216-679-11	METAL	15K	0.50%	1/10W
R320	1-216-650-11	METAL	910	0.50%	1/10W
R321	1-216-651-11	METAL	1K	0.50%	1/10W
R322	1-216-647-11	METAL	680	0.50%	1/10W
R323	1-216-651-11	METAL	1K	0.50%	1/10W
R324	1-216-665-11	METAL	3.9K	0.50%	1/10W
R325	1-216-657-11	METAL	1.8K	0.50%	1/10W
R326	1-216-309-00	METAL	5.6	5%	1/10W
R327	1-216-309-00	METAL	5.6	5%	1/10W
R328	1-216-650-11	METAL	910	0.50%	1/10W
R329	1-216-627-11	METAL	100	0.50%	1/10W
R330	1-216-647-11	METAL	680	0.50%	1/10W
R331	1-216-649-11	METAL	820	0.50%	1/10W
R332	1-216-663-11	METAL	3.3K	0.50%	1/10W
R333	1-216-627-11	METAL	100	0.50%	1/10W
R334	1-216-681-11	METAL	18K	0.50%	1/10W
R335	1-216-675-11	METAL	10K	0.50%	1/10W
R336	1-216-073-00	METAL	10K	5%	1/10W
R337	1-216-073-00	METAL	10K	5%	1/10W
R338	1-216-073-00	METAL	10K	5%	1/10W
R339	1-216-073-00	METAL	10K	5%	1/10W
R340	1-216-073-00	METAL	10K	5%	1/10W
R341	1-216-073-00	METAL	10K	5%	1/10W
R342	1-216-073-00	METAL	10K	5%	1/10W
R343	1-216-073-00	METAL	10K	5%	1/10W
R344	1-216-619-11	METAL	47	0.50%	1/10W
R345	1-216-611-11	METAL	22	0.50%	1/10W
R346	1-216-295-00	METAL	0	5%	1/10W
R347	1-216-049-00	METAL	1K	5%	1/10W
R348	1-216-049-00	METAL	1K	5%	1/10W
R349	1-216-049-00	METAL	1K	5%	1/10W
R350	1-216-049-00	METAL	1K	5%	1/10W
R351	1-216-049-00	METAL	1K	5%	1/10W
R352	1-216-049-00	METAL	1K	5%	1/10W
R353	1-216-049-00	METAL	1K	5%	1/10W
R354	1-216-049-00	METAL	1K	5%	1/10W
R355	1-216-097-00	METAL	100K	5%	1/10W
R357	1-216-685-11	METAL	27K	0.50%	1/10W
R358	1-216-647-11	METAL	680	0.50%	1/10W
R360	1-216-634-11	METAL	200	0.50%	1/10W
R361	1-216-627-11	METAL	100	0.50%	1/10W
R362	1-216-655-11	METAL	1.5K	0.50%	1/10W
R363	1-216-651-11	METAL	1K	0.50%	1/10W
R364	1-216-651-11	METAL	1K	0.50%	1/10W
R365	1-216-663-11	METAL	3.3K	0.50%	1/10W

Ref.No	Part No.	Description			Remark
R366	1-216-644-11	METAL	510	0.50%	1/10W
R367	1-216-651-11	METAL	1K	0.50%	1/10W
R368	1-216-647-11	METAL	680	0.50%	1/10W
R369	1-216-665-11	METAL	3.9K	0.50%	1/10W
R370	1-216-627-11	METAL	100	0.50%	1/10W
R371	1-216-683-11	METAL	22K	0.50%	1/10W
R372	1-216-657-11	METAL	1.8K	0.50%	1/10W
R373	1-216-309-00	METAL	5.6	5%	1/10W
R374	1-216-309-00	METAL	5.6	5%	1/10W
R375	1-216-651-11	METAL	1K	0.50%	1/10W
R376	1-216-645-11	METAL	560	0.50%	1/10W
R377	1-216-651-11	METAL	1K	0.50%	1/10W
R378	1-216-665-11	METAL	3.9K	0.50%	1/10W
R379	1-216-647-11	METAL	680	0.50%	1/10W
R380	1-216-651-11	METAL	1K	0.50%	1/10W
R381	1-216-657-11	METAL	1.8K	0.50%	1/10W
R382	1-216-309-00	METAL	5.6	5%	1/10W
R383	1-216-309-00	METAL	5.6	5%	1/10W
R384	1-216-651-11	METAL	1K	0.50%	1/10W
R385	1-216-624-11	METAL	75	0.50%	1/10W
R390	1-216-674-11	METAL	9.1K	0.50%	1/10W
R400	1-216-065-00	METAL	4.7K	5%	1/10W
R401	1-216-065-00	METAL	4.7K	5%	1/10W
R402	1-216-065-00	METAL	4.7K	5%	1/10W
R403	1-216-065-00	METAL	4.7K	5%	1/10W
R404	1-216-065-00	METAL	4.7K	5%	1/10W
R405	1-216-065-00	METAL	4.7K	5%	1/10W
R406	1-216-065-00	METAL	4.7K	5%	1/10W
R407	1-216-065-00	METAL	4.7K	5%	1/10W
R408	1-216-065-00	METAL	4.7K	5%	1/10W
R409	1-216-065-00	METAL	4.7K	5%	1/10W
R410	1-216-065-00	METAL	4.7K	5%	1/10W
R411	1-216-065-00	METAL	4.7K	5%	1/10W
R412	1-216-065-00	METAL	4.7K	5%	1/10W
R413	1-216-065-00	METAL	4.7K	5%	1/10W
R414	1-216-065-00	METAL	4.7K	5%	1/10W
R415	1-216-065-00	METAL	4.7K	5%	1/10W
R416	1-216-065-00	METAL	4.7K	5%	1/10W
R417	1-216-065-00	METAL	4.7K	5%	1/10W
R418	1-216-065-00	METAL	4.7K	5%	1/10W
R419	1-216-065-00	METAL	4.7K	5%	1/10W
R420	1-216-065-00	METAL	4.7K	5%	1/10W
R421	1-216-065-00	METAL	4.7K	5%	1/10W
R422	1-216-065-00	METAL	4.7K	5%	1/10W
R423	1-216-065-00	METAL	4.7K	5%	1/10W
R424	1-216-065-00	METAL	4.7K	5%	1/10W
R425	1-216-065-00	METAL	4.7K	5%	1/10W
R426	1-216-065-00	METAL	4.7K	5%	1/10W
R427	1-216-065-00	METAL	4.7K	5%	1/10W
R428	1-216-065-00	METAL	4.7K	5%	1/10W
R429	1-216-065-00	METAL	4.7K	5%	1/10W
R430	1-216-065-00	METAL	4.7K	5%	1/10W
R431	1-216-065-00	METAL	4.7K	5%	1/10W
R432	1-216-065-00	METAL	4.7K	5%	1/10W
R433	1-216-065-00	METAL	4.7K	5%	1/10W
R434	1-216-065-00	METAL	4.7K	5%	1/10W
R435	1-216-065-00	METAL	4.7K	5%	1/10W
R436	1-216-065-00	METAL	4.7K	5%	1/10W
R437	1-216-065-00	METAL	4.7K	5%	1/10W
R438	1-216-065-00	METAL	4.7K	5%	1/10W
R439	1-216-065-00	METAL	4.7K	5%	1/10W
R440	1-216-065-00	METAL	4.7K	5%	1/10W
R441	1-216-073-00	METAL	10K	5%	1/10W
R442	1-216-073-00	METAL	10K	5%	1/10W
R443	1-216-073-00	METAL	10K	5%	1/10W

Ref.No	Part No.	Description			Remark
R444	1-216-073-00	METAL	10K	5%	1/10W
R445	1-216-073-00	METAL	10K	5%	1/10W
R446	1-216-073-00	METAL	10K	5%	1/10W
R447	1-216-073-00	METAL	10K	5%	1/10W
R448	1-216-073-00	METAL	10K	5%	1/10W
R449	1-216-073-00	METAL	10K	5%	1/10W
R450	1-216-073-00	METAL	10K	5%	1/10W
R451	1-216-073-00	METAL	10K	5%	1/10W
R452	1-216-073-00	METAL	10K	5%	1/10W
R453	1-216-073-00	METAL	10K	5%	1/10W
R454	1-216-073-00	METAL	10K	5%	1/10W
R455	1-216-073-00	METAL	10K	5%	1/10W
R456	1-216-073-00	METAL	10K	5%	1/10W
R457	1-216-073-00	METAL	10K	5%	1/10W
R458	1-216-073-00	METAL	10K	5%	1/10W
R459	1-216-073-00	METAL	10K	5%	1/10W
R460	1-216-073-00	METAL	10K	5%	1/10W
R461	1-216-073-00	METAL	10K	5%	1/10W
R462	1-216-073-00	METAL	10K	5%	1/10W
R463	1-216-073-00	METAL	10K	5%	1/10W
R464	1-216-073-00	METAL	10K	5%	1/10W
R700	1-216-081-00	METAL	22K	5%	1/10W
R701	1-216-053-00	METAL	1.5K	5%	1/10W
R702	1-216-083-00	METAL	27K	5%	1/10W
R703	1-216-085-00	METAL	33K	5%	1/10W
R704	1-249-385-11	CARBON	2.2	5%	1/4W
R705	1-249-385-11	CARBON	2.2	5%	1/4W
R706	1-216-067-00	METAL	5.6K	5%	1/10W
R707	1-216-073-00	METAL	10K	5%	1/10W
R708	1-247-804-11	CARBON	75	5%	1/4W
R709	1-216-049-00	METAL	1K	5%	1/10W
R710	1-216-037-00	METAL	330	5%	1/10W
R711	1-216-067-00	METAL	5.6K	5%	1/10W
R712	1-216-067-00	METAL	5.6K	5%	1/10W
R801	1-216-669-11	METAL	5.6K	0.50%	1/10W
R802	1-216-665-11	METAL	3.9K	0.50%	1/10W
R803	1-216-663-11	METAL	3.3K	0.50%	1/10W

<VARIABLE RESISTOR>

RV1	1-238-854-11	RES, ADJ, CERMET 2.2K
RV2	1-238-851-11	RES, ADJ, CERMET 220
RV3	1-238-851-11	RES, ADJ, CERMET 220
RV101	1-238-852-11	RES, ADJ, CERMET 470
RV104	1-238-853-11	RES, ADJ, CERMET 1K
RV105	1-238-853-11	RES, ADJ, CERMET 1K
RV201	1-238-852-11	RES, ADJ, CERMET 470
RV204	1-238-853-11	RES, ADJ, CERMET 1K
RV205	1-238-853-11	RES, ADJ, CERMET 1K
RV301	1-238-852-11	RES, ADJ, CERMET 470
RV304	1-238-853-11	RES, ADJ, CERMET 1K
RV305	1-238-853-11	RES, ADJ, CERMET 1K

<SWITCH>

S1	1-571-120-11	SWITCH, SLIDE
S2	1-571-120-11	SWITCH, SLIDE
S6	1-571-120-11	SWITCH, SLIDE
S7	1-571-187-11	SWITCH, TACTIL (REFLOW TYPE)
S8	1-571-187-11	SWITCH, TACTIL (REFLOW TYPE)

** **

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Ref.No	Part No.	Description			Remark
	*A-8275-622-A	SY-194 BOARD, COMPLETE **********************			
	1-533-189-11	HOLDER, FUSE			
	*2-182-909-01	LEVER, PC BOARD			
	7-626-320-11	PIN, SPRING 3X8			
	7-685-903-11	SCREW +PTPWH 3X6 (TYPE2)			
		<BUZZER>			
BZ1	1-529-029-11	SPEAKER			
		<CAPACITOR>			
C1	1-163-038-00	CERAMIC	0.1uF	0%	25V
C2	1-163-038-00	CERAMIC	0.1uF	0%	25V
C3	1-163-038-00	CERAMIC	0.1uF	0%	25V
C4	1-163-038-00	CERAMIC	0.1uF	0%	25V
C5	1-135-091-91	TANTAL	1uF	20%	16V
C6	1-163-038-00	CERAMIC	0.1uF		25V
C7	1-163-038-00	CERAMIC	0.1uF		25V
C8	1-135-091-91	TANTAL	1uF	20%	16V
C9	1-163-038-00	CERAMIC	0.1uF		25V
C10	1-163-038-00	CERAMIC	0.1uF		25V
C11	1-163-038-00	CERAMIC	0.1uF		25V
C12	1-163-038-00	CERAMIC	0.1uF		25V
C13	1-163-038-00	CERAMIC	0.1uF		25V
C14	1-163-038-00	CERAMIC	0.1uF		25V
C15	1-163-038-00	CERAMIC	0.1uF		25V
C16	1-163-038-00	CERAMIC	0.1uF		25V
C17	1-163-038-00	CERAMIC	0.1uF		25V
C18	1-163-038-00	CERAMIC	0.1uF		25V
C19	1-163-038-00	CERAMIC	0.1uF		25V
C20	1-135-161-21	TANTAL	22uF	20%	10V
C21	1-163-038-00	CERAMIC	0.1uF		25V
C22	1-163-038-00	CERAMIC	0.1uF		25V
C23	1-163-038-00	CERAMIC	0.1uF		25V
C30	1-163-038-00	CERAMIC	0.1uF		25V
C31	1-135-159-21	TANTAL	10uF	20%	20V
C32	1-135-159-21	TANTAL	10uF	20%	20V
C33	1-135-155-21	TANTAL	4.7uF	20%	16V
C34	1-135-155-21	TANTAL	4.7uF	20%	16V
C35	1-163-038-00	CERAMIC	0.1uF		25V
C44	1-163-038-00	CERAMIC	0.1uF		25V
C100	1-126-934-11	ELECT	220uF	20%	16V
C101	1-126-933-11	ELECT	100uF	20%	16V
C102	1-163-038-00	CERAMIC	0.1uF		25V
C200	1-163-038-00	CERAMIC	0.1uF		25V
C201	1-163-038-00	CERAMIC	0.1uF		25V
C202	1-163-038-00	CERAMIC	0.1uF		25V
C203	1-163-038-00	CERAMIC	0.1uF		25V
C204	1-163-038-00	CERAMIC	0.1uF		25V
C205	1-163-038-00	CERAMIC	0.1uF		25V
C206	1-163-038-00	CERAMIC	0.1uF		25V
C207	1-163-038-00	CERAMIC	0.1uF		25V
C208	1-163-038-00	CERAMIC	0.1uF		25V
C210	1-163-038-00	CERAMIC	0.1uF		25V
C211	1-163-038-00	CERAMIC	0.1uF		25V
C212	1-163-038-00	CERAMIC	0.1uF		25V
C213	1-163-038-00	CERAMIC	0.1uF		25V
C214	1-163-038-00	CERAMIC	0.1uF		25V
C215	1-163-038-00	CERAMIC	0.1uF		25V
C217	1-163-038-00	CERAMIC	0.1uF		25V
C218	1-163-038-00	CERAMIC	0.1uF		25V
C219	1-163-038-00	CERAMIC	0.1uF		25V
C220	1-163-038-00	CERAMIC	0.1uF		25V
C221	1-163-038-00	CERAMIC	0.1uF		25V
C222	1-163-038-00	CERAMIC	0.1uF		25V
C225	1-163-038-00	CERAMIC	0.1uF		25V
C227	1-163-038-00	CERAMIC	0.1uF		25V
C228	1-163-038-00	CERAMIC	0.1uF		25V
C230	1-163-038-00	CERAMIC	0.1uF		25V
C231	1-163-038-00	CERAMIC	0.1uF		25V
C232	1-163-038-00	CERAMIC	0.1uF		25V
C233	1-163-038-00	CERAMIC	0.1uF		25V
C300	1-163-038-00	CERAMIC	0.1uF		25V
C301	1-163-038-00	CERAMIC	0.1uF		25V
C302	1-163-038-00	CERAMIC	0.1uF		25V
C303	1-163-038-00	CERAMIC	0.1uF		25V
C304	1-163-038-00	CERAMIC	0.1uF		25V
C305	1-163-038-00	CERAMIC	0.1uF		25V
C306	1-163-038-00	CERAMIC	0.1uF		25V
C307	1-163-038-00	CERAMIC	0.1uF		25V
C308	1-163-038-00	CERAMIC	0.1uF		25V
C309	1-163-038-00	CERAMIC	0.1uF		25V
C310	1-163-038-00	CERAMIC	0.1uF		25V
C311	1-163-038-00	CERAMIC	0.1uF		25V
C312	1-163-038-00	CERAMIC	0.1uF		25V
C400	1-163-038-00	CERAMIC	0.1uF		25V
C401	1-163-038-00	CERAMIC	0.1uF		25V
C402	1-163-038-00	CERAMIC	0.1uF		25V
C403	1-163-038-00	CERAMIC	0.1uF		25V
C404	1-135-161-21	TANTAL	22uF	20%	6.3V
C405	1-163-038-00	CERAMIC	0.1uF		25V
C406	1-163-038-00	CERAMIC	0.1uF		25V
C407	1-135-161-21	TANTAL	22uF	20%	6.3V
C413	1-163-038-00	CERAMIC	0.1uF		25V
C414	1-163-038-00	CERAMIC	0.1uF		25V
C415	1-163-038-00	CERAMIC	0.1uF		25V
C416	1-163-038-00	CERAMIC	0.1uF		25V
C417	1-163-038-00	CERAMIC	0.1uF		25V
C418	1-163-038-00	CERAMIC	0.1uF		25V
C419	1-163-038-00	CERAMIC	0.1uF		25V
C420	1-163-038-00	CERAMIC	0.1uF		25V
C421	1-163-038-00	CERAMIC	0.1uF		25V
C422	1-163-038-00	CERAMIC	0.1uF		25V
C425	1-163-038-00	CERAMIC	0.1uF		25V
C426	1-163-038-00	CERAMIC	0.1uF		25V
C428	1-163-038-00	CERAMIC	0.1uF		25V
C429	1-163-038-00	CERAMIC	0.1uF		25V
C430	1-163-038-00	CERAMIC	0.1uF		25V
C431	1-163-038-00	CERAMIC	0.1uF		25V
C432	1-163-038-00	CERAMIC	0.1uF		25V
C433	1-163-038-00	CERAMIC	0.1uF		25V
C434	1-163-038-00	CERAMIC	0.1uF		25V
C435	1-163-038-00	CERAMIC	0.1uF		25V
C436	1-163-038-00	CERAMIC	0.1uF		25V
C437	1-126-933-11	ELECT	100uF	20%	16V
C442	1-163-251-11	CERAMIC	100PF	5%	50V
C443	1-135-161-21	TANTAL	22uF	20%	10V
C444	1-163-038-00	CERAMIC	0.1uF		25V
C445	1-163-133-00	CERAMIC	470PF	5%	50V
C446	1-163-139-00	CERAMIC	820PF	5%	50V
C447	1-135-070-00	TANTAL	0.1uF	20%	35V
C448	1-162-625-11	CERAMIC	0.0047uF	5%	50V
C449	1-135-161-21	TANTAL	22uF	20%	6.3V
C450	1-163-038-00	CERAMIC	0.1uF		25V
C452	1-135-145-11	TANTAL	0.47uF	20%	35V
C501	1-163-038-00	CERAMIC	0.1uF		25V
C502	1-163-239-11	CERAMIC	33PF	5%	50V
C503	1-163-239-11	CERAMIC	33PF	5%	50V

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No	Part No.	Description			Remark
C504	1-163-038-00	CERAMIC	0.1uF		25V
C505	1-163-038-00	CERAMIC	0.1uF		25V
C521	1-163-038-00	CERAMIC	0.1uF		25V
C531	1-163-275-11	CERAMIC	0.001uF	5%	50V
C606	1-163-038-00	CERAMIC	0.1uF		25V
C607	1-163-038-00	CERAMIC	0.1uF		25V
C608	1-163-038-00	CERAMIC	0.1uF		25V
C609	1-163-038-00	CERAMIC	0.1uF		25V
C610	1-163-038-00	CERAMIC	0.1uF		25V
C611	1-163-038-00	CERAMIC	0.1uF		25V
C612	1-163-038-00	CERAMIC	0.1uF		25V
C613	1-163-038-00	CERAMIC	0.1uF		25V
C614	1-163-038-00	CERAMIC	0.1uF		25V
C615	1-163-038-00	CERAMIC	0.1uF		25V
C616	1-163-038-00	CERAMIC	0.1uF		25V
C617	1-163-038-00	CERAMIC	0.1uF		25V
C618	1-163-038-00	CERAMIC	0.1uF		25V
C619	1-163-038-00	CERAMIC	0.1uF		25V
C620	1-163-038-00	CERAMIC	0.1uF		25V
C621	1-163-038-00	CERAMIC	0.1uF		25V
C622	1-163-038-00	CERAMIC	0.1uF		25V
C623	1-163-038-00	CERAMIC	0.1uF		25V
C624	1-163-038-00	CERAMIC	0.1uF		25V
C625	1-163-038-00	CERAMIC	0.1uF		25V
C626	1-163-038-00	CERAMIC	0.1uF		25V
C627	1-163-038-00	CERAMIC	0.1uF		25V
C628	1-163-038-00	CERAMIC	0.1uF		25V
C629	1-163-038-00	CERAMIC	0.1uF		25V
C630	1-163-038-00	CERAMIC	0.1uF		25V
C631	1-163-038-00	CERAMIC	0.1uF		25V
C632	1-163-038-00	CERAMIC	0.1uF		25V
C633	1-163-038-00	CERAMIC	0.1uF		25V
C634	1-163-038-00	CERAMIC	0.1uF		25V
C635	1-163-038-00	CERAMIC	0.1uF		25V
C637	1-163-038-00	CERAMIC	0.1uF		25V
C638	1-163-038-00	CERAMIC	0.1uF		25V
C639	1-163-038-00	CERAMIC	0.1uF		25V
C640	1-163-038-00	CERAMIC	0.1uF		25V
C641	1-163-038-00	CERAMIC	0.1uF		25V
C642	1-163-038-00	CERAMIC	0.1uF		25V
C643	1-163-038-00	CERAMIC	0.1uF		25V
C644	1-163-038-00	CERAMIC	0.1uF		25V
C645	1-163-038-00	CERAMIC	0.1uF		25V
C646	1-163-038-00	CERAMIC	0.1uF		25V
C647	1-163-121-00	CERAMIC	150PF	5%	50V
C648	1-163-121-00	CERAMIC	150PF	5%	50V
C649	1-163-121-00	CERAMIC	150PF	5%	50V
C650	1-163-038-00	CERAMIC	0.1uF		25V
C651	1-163-038-00	CERAMIC	0.1uF		25V
C652	1-163-038-00	CERAMIC	0.1uF		25V
C653	1-163-038-00	CERAMIC	0.1uF		25V
C654	1-163-038-00	CERAMIC	0.1uF		25V
C655	1-163-038-00	CERAMIC	0.1uF		25V
C656	1-163-038-00	CERAMIC	0.1uF		25V
C657	1-163-038-00	CERAMIC	0.1uF		25V
C658	1-163-038-00	CERAMIC	0.1uF		25V
C659	1-163-038-00	CERAMIC	0.1uF		25V
C660	1-163-038-00	CERAMIC	0.1uF		25V
C661	1-163-038-00	CERAMIC	0.1uF		25V
C662	1-163-038-00	CERAMIC	0.1uF		25V
C663	1-163-038-00	CERAMIC	0.1uF		25V
C664	1-163-038-00	CERAMIC	0.1uF		25V
C665	1-163-038-00	CERAMIC	0.1uF		25V
C666	1-163-038-00	CERAMIC	0.1uF		25V
C667	1-163-038-00	CERAMIC	0.1uF		25V

Ref.No	Part No.	Description			Remark
C668	1-163-038-00	CERAMIC	0.1uF		25V
C669	1-163-038-00	CERAMIC	0.1uF		25V
C670	1-163-038-00	CERAMIC	0.1uF		25V
C671	1-163-038-00	CERAMIC	0.1uF		25V
C672	1-163-038-00	CERAMIC	0.1uF		25V
C673	1-163-038-00	CERAMIC	0.1uF		25V
C674	1-163-038-00	CERAMIC	0.1uF		25V
C675	1-163-038-00	CERAMIC	0.1uF		25V
C676	1-163-038-00	CERAMIC	0.1uF		25V
C677	1-163-038-00	CERAMIC	0.1uF		25V
C678	1-163-038-00	CERAMIC	0.1uF		25V
C679	1-163-038-00	CERAMIC	0.1uF		25V
C680	1-163-038-00	CERAMIC	0.1uF		25V
C681	1-163-038-00	CERAMIC	0.1uF		25V
C682	1-163-038-00	CERAMIC	0.1uF		25V
C683	1-163-038-00	CERAMIC	0.1uF		25V
C684	1-163-038-00	CERAMIC	0.1uF		25V
C685	1-163-038-00	CERAMIC	0.1uF		25V
C686	1-163-038-00	CERAMIC	0.1uF		25V
C687	1-163-038-00	CERAMIC	0.1uF		25V
C688	1-163-038-00	CERAMIC	0.1uF		25V
C689	1-163-038-00	CERAMIC	0.1uF		25V
C690	1-163-038-00	CERAMIC	0.1uF		25V
C691	1-163-038-00	CERAMIC	0.1uF		25V
C692	1-163-038-00	CERAMIC	0.1uF		25V
C693	1-163-038-00	CERAMIC	0.1uF		25V
C694	1-163-038-00	CERAMIC	0.1uF		25V
C695	1-164-073-11	CERAMIC	100PF	10%	50V

<CONNECTOR>

Ref.No	Part No.	Description
CN1	1-573-600-21	CONNECTOR, PC BOARD (PLUG)100P
CN2	1-573-600-21	CONNECTOR, PC BOARD (PLUG)100P
CN5	1-564-014-11	PIN, CONNECTOR 4P

<IC SOCKET>

Ref.No	Part No.	Description
CNI10	*1-526-659-00	SOCKET, IC (DP) 28P
CNI11	*1-526-659-00	SOCKET, IC (DP) 28P

<DIODE>

Ref.No	Part No.	Description
D9	8-719-157-36	DIODE RD6.8M-B
D10	8-719-157-36	DIODE RD6.8M-B
D41	8-719-404-07	DIODE LN45YP

<FUSE>

Ref.No	Part No.	Description
F1	⚠1-532-743-11	FUSE, GLASS TUBE

<FERRITE BEAD>

Ref.No	Part No.	Description
FB1	1-410-396-71	INDUCTOR 0.45UH

<FILTER>

Ref.No	Part No.	Description
FL1	1-421-773-11	FILTER, NOISE REMOVAL
FL2	1-236-058-21	ENCAPSULATED COMPONENT
FL3	1-236-058-21	ENCAPSULATED COMPONENT
FL4	1-239-237-21	FILTER, LOW PASS
FL5	1-239-237-21	FILTER, LOW PASS
FL6	1-239-237-21	FILTER, LOW PASS
FL7	1-239-237-21	FILTER, LOW PASS
FL8	1-239-237-21	FILTER, LOW PASS

<IC>

Ref.No	Part No.	Description
IC1	8-759-246-75	IC TMP68301AF-12
IC6	8-759-925-85	IC SN74HC32ANS
IC7	8-759-925-74	IC SN74HC04ANS
IC9	1-577-541-11	OSCILLATOR, CRYSTAL (IC TYPE)
IC10	*8-759-259-23	IC 27C512-15JL-S10V1.00

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Ref.No	Part No.	Description	Remark
IC11	*8-759-259-24	IC 27C512-15JL-S11V1.00	
IC12	8-759-045-20	IC MB84256A-10LPF	
IC13	8-759-045-20	IC MB84256A-10LPF	
IC14	8-759-720-57	IC HN58C65FP-25T	
IC15	8-759-720-57	IC HN58C65FP-25T	
IC16	8-759-045-20	IC MB84256A-10LPF	
IC17	8-759-045-20	IC MB84256A-10LPF	
IC18	8-759-973-43	IC MB8421-90LPFQ	
IC20	8-759-973-71	IC TL7705CPS-B	
IC21	8-759-989-56	IC SN74ALS244BNS	
IC22	8-759-926-05	IC SN74HC125ANS	
IC23	8-759-925-80	IC SN74HC14ANS	
IC30	8-759-521-07	IC MAX238CWG	
IC44	8-759-925-76	IC SN74HC08ANS	
IC200	8-759-926-18	IC SN74HC157ANS	
IC201	8-759-926-18	IC SN74HC157ANS	
IC202	8-759-926-18	IC SN74HC157ANS	
IC203	8-759-926-18	IC SN74HC157ANS	
IC204	8-759-926-18	IC SN74HC157ANS	
IC205	8-759-926-23	IC SN74HC163ANS	
IC206	8-759-926-23	IC SN74HC163ANS	
IC207	8-759-926-23	IC SN74HC163ANS	
IC208	8-759-926-23	IC SN74HC163ANS	
IC210	8-752-365-27	IC CXK581000AM-70LL-TL	
IC211	8-759-926-49	IC SN74HC245ANS	
IC212	8-759-926-48	IC SN74HC244ANS	
IC213	8-759-927-46	IC SN74HC00ANS	
IC214	8-759-925-85	IC SN74HC32ANS	
IC215	8-759-926-67	IC SN74HC374ANS	
IC217	8-759-926-25	IC SN74HC165ANS	
IC218	8-759-926-24	IC SN74HC164ANS	
IC219	8-759-926-67	IC SN74HC374ANS	
IC220	8-759-926-25	IC SN74HC165ANS	
IC221	8-759-926-24	IC SN74HC164ANS	
IC222	8-759-925-90	IC SN74HC74ANS	
IC225	8-759-933-98	IC SN74ALS08NS	
IC227	8-759-934-08	IC SN74ALS27NS	
IC228	8-759-515-09	IC SN74ALS374ANS	
IC230	8-759-989-56	IC SN74ALS244BNS	
IC231	8-759-933-98	IC SN74ALS08NS	
IC232	8-759-934-11	IC SN74ALS32NS	
IC233	8-759-515-09	IC SN74ALS374ANS	
IC300	8-759-259-20	IC EPM5128LC-S12	
IC301	8-759-518-69	IC MB89363PF	
IC302	8-759-065-20	IC RTC-4553B	
IC303	8-759-008-40	IC MC74HC4078F	
IC304	8-759-926-99	IC SN74HC4075ANS	
IC305	8-759-926-48	IC SN74HC244ANS	
IC306	8-759-926-48	IC SN74HC244ANS	
IC307	8-759-926-48	IC SN74HC244ANS	
IC308	8-759-926-49	IC SN74HC245ANS	
IC309	8-759-926-48	IC SN74HC244ANS	
IC400	8-759-239-34	IC TC74HC4538AF	
IC401	8-759-925-90	IC SN74HC74ANS	
IC402	8-759-929-26	IC TL431CPS	
IC403	8-759-239-34	IC TC74HC4538AF	
IC404	8-759-987-27	IC LM1881M	
IC410	8-752-306-51	IC CX23065A	
IC411	8-759-908-17	IC TL082CPS	
IC412	8-759-011-65	IC MC74HC4053F	
IC413	8-759-989-56	IC SN74ALS244BNS	
IC414	8-759-973-85	IC SN74ALS74ANS	
IC415	8-759-926-24	IC SN74HC164ANS	
IC416	8-759-926-24	IC SN74HC164ANS	
IC417	8-759-926-50	IC SN74HC251ANS	
IC418	8-759-926-50	IC SN74HC251ANS	
IC419	8-752-332-67	IC CXD1217M	
IC420	8-759-926-24	IC SN74HC164ANS	
IC421	8-759-926-24	IC SN74HC164ANS	
IC422	8-759-989-56	IC SN74ALS244BNS	
IC425	8-759-926-50	IC SN74HC251ANS	
IC426	8-759-980-27	IC SN74ALS163BNS	
IC428	8-759-989-56	IC SN74ALS244BNS	
IC429	8-759-925-74	IC SN74HC04ANS	
IC430	8-759-933-94	IC SN74ALS02NS	
IC431	8-759-973-85	IC SN74ALS74ANS	
IC432	8-759-925-90	IC SN74HC74ANS	
IC433	8-759-973-85	IC SN74ALS74ANS	
IC434	8-759-925-90	IC SN74HC74ANS	
IC435	8-759-933-92	IC SN74ALS00ANS	
IC501	*8-759-259-21	IC UPD75P516GF-DKUZ-01	
IC521	8-759-078-75	IC UPD6453GT-610	
IC600	8-752-362-81	IC CXD210-108Q	
IC601	8-752-362-79	IC CXD208-101Q	
IC602	8-752-362-80	IC CXD209-114Q	
IC603	8-752-334-14	IC CXD2200G	
IC604	8-752-362-79	IC CXD208-101Q	
IC605	8-759-252-17	IC MB86601APF	
IC606	8-752-365-27	IC CXK581000AM-70LL-TL	
IC607	8-752-365-27	IC CXK581000AM-70LL-TL	
IC608	8-752-365-27	IC CXK581000AM-70LL-TL	
IC609	8-752-365-27	IC CXK581000AM-70LL-TL	
IC610	8-759-926-67	IC SN74HC374ANS	
IC611	8-759-926-67	IC SN74HC374ANS	
IC612	8-759-515-09	IC SN74ALS374ANS	
IC613	8-759-925-72	IC SN74HC02ANS	
IC614	8-759-934-54	IC SN74ALS273NS	
IC615	8-759-934-54	IC SN74ALS273NS	
IC616	8-759-989-56	IC SN74ALS244BNS	
IC617	8-759-515-09	IC SN74ALS374ANS	
IC618	8-759-011-65	IC MC74HC4053F	
IC619	8-759-011-65	IC MC74HC4053F	
IC620	8-759-946-65	IC SN74ALS04BNS	
IC621	8-759-933-94	IC SN74ALS02NS	
IC622	8-759-933-92	IC SN74ALS00ANS	
IC623	8-759-946-65	IC SN74ALS04BNS	
IC624	8-759-973-85	IC SN74ALS74ANS	
IC625	8-759-973-85	IC SN74ALS74ANS	
IC626	8-759-933-92	IC SN74ALS00ANS	
IC627	8-759-933-92	IC SN74ALS00ANS	
IC628	8-759-933-92	IC SN74ALS00ANS	
IC629	8-759-987-92	IC SN74ALS10ANS	
IC630	8-759-987-92	IC SN74ALS10ANS	
IC631	8-759-987-92	IC SN74ALS10ANS	
IC632	8-759-946-65	IC SN74ALS04BNS	
IC633	8-759-989-56	IC SN74ALS244BNS	
IC634	8-759-926-48	IC SN74HC244ANS	
IC635	8-759-926-48	IC SN74HC244ANS	
IC636	8-752-362-83	IC CXD209-107Q	
IC637	8-759-934-11	IC SN74ALS32NS	
IC638	8-759-933-98	IC SN74ALS08NS	
IC639	8-759-927-46	IC SN74HC00ANS	
IC640	8-759-934-29	IC SN74ALS153NS	
IC641	8-759-515-09	IC SN74ALS374ANS	
IC642	8-759-933-92	IC SN74ALS00ANS	
IC643	8-759-011-65	IC MC74HC4053F	
IC644	8-759-011-65	IC MC74HC4053F	
IC645	8-759-011-65	IC MC74HC4053F	
IC646	8-759-011-65	IC MC74HC4053F	

Ref.No	Part No.	Description			Remark
		<INDUCTOR>			
L1	1-421-904-11	COIL, CHOKE 47UH			
L2	1-421-904-11	COIL, CHOKE 47UH			
L3	1-421-904-11	COIL, CHOKE 47UH			
L4	1-421-904-11	COIL, CHOKE 47UH			
L5	1-410-381-11	INDUCTOR CHIP 10UH			
L6	1-410-381-11	INDUCTOR CHIP 10UH			
		<TRANSISTOR>			
Q4	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q5	8-729-109-44	TRANSISTOR 2SK94-X4			
Q300	8-729-901-01	TRANSISTOR DTC144EK			
Q531	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q532	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
		<RESISTOR>			
R1	1-216-049-00	METAL	1K	5%	1/10W
R2	1-216-049-00	METAL	1K	5%	1/10W
R3	1-216-049-00	METAL	1K	5%	1/10W
R4	1-216-049-00	METAL	1K	5%	1/10W
R5	1-216-049-00	METAL	1K	5%	1/10W
R6	1-216-049-00	METAL	1K	5%	1/10W
R7	1-216-049-00	METAL	1K	5%	1/10W
R8	1-216-049-00	METAL	1K	5%	1/10W
R9	1-216-049-00	METAL	1K	5%	1/10W
R10	1-216-049-00	METAL	1K	5%	1/10W
R11	1-216-049-00	METAL	1K	5%	1/10W
R12	1-216-049-00	METAL	1K	5%	1/10W
R13	1-216-049-00	METAL	1K	5%	1/10W
R14	1-216-049-00	METAL	1K	5%	1/10W
R15	1-216-049-00	METAL	1K	5%	1/10W
R16	1-216-049-00	METAL	1K	5%	1/10W
R17	1-216-049-00	METAL	1K	5%	1/10W
R18	1-216-049-00	METAL	1K	5%	1/10W
R19	1-216-049-00	METAL	1K	5%	1/10W
R20	1-216-049-00	METAL	1K	5%	1/10W
R21	1-216-049-00	METAL	1K	5%	1/10W
R22	1-216-049-00	METAL	1K	5%	1/10W
R23	1-216-049-00	METAL	1K	5%	1/10W
R24	1-216-049-00	METAL	1K	5%	1/10W
R25	1-216-049-00	METAL	1K	5%	1/10W
R26	1-216-049-00	METAL	1K	5%	1/10W
R27	1-216-049-00	METAL	1K	5%	1/10W
R28	1-216-049-00	METAL	1K	5%	1/10W
R29	1-216-049-00	METAL	1K	5%	1/10W
R30	1-216-049-00	METAL	1K	5%	1/10W
R31	1-216-049-00	METAL	1K	5%	1/10W
R32	1-216-049-00	METAL	1K	5%	1/10W
R33	1-216-049-00	METAL	1K	5%	1/10W
R34	1-216-049-00	METAL	1K	5%	1/10W
R35	1-216-049-00	METAL	1K	5%	1/10W
R36	1-216-049-00	METAL	1K	5%	1/10W
R37	1-216-049-00	METAL	1K	5%	1/10W
R38	1-216-049-00	METAL	1K	5%	1/10W
R39	1-216-049-00	METAL	1K	5%	1/10W
R40	1-216-073-00	METAL	10K	5%	1/10W
R41	1-216-073-00	METAL	10K	5%	1/10W
R42	1-216-073-00	METAL	10K	5%	1/10W
R43	1-216-073-00	METAL	10K	5%	1/10W
R44	1-216-041-00	METAL	470	5%	1/10W
R45	1-216-689-11	METAL	39K	5%	1/10W
R46	1-216-689-11	METAL	39K	5%	1/10W
R47	1-216-073-00	METAL	10K	5%	1/10W
R48	1-216-073-00	METAL	10K	5%	1/10W

Ref.No	Part No.	Description			Remark
R49	1-216-073-00	METAL	10K	5%	1/10W
R50	1-216-073-00	METAL	10K	5%	1/10W
R51	1-216-073-00	METAL	10K	5%	1/10W
R52	1-216-073-00	METAL	10K	5%	1/10W
R53	1-216-073-00	METAL	10K	5%	1/10W
R54	1-216-073-00	METAL	10K	5%	1/10W
R55	1-216-073-00	METAL	10K	5%	1/10W
R56	1-216-073-00	METAL	10K	5%	1/10W
R57	1-216-073-00	METAL	10K	5%	1/10W
R58	1-216-073-00	METAL	10K	5%	1/10W
R59	1-216-073-00	METAL	10K	5%	1/10W
R60	1-216-073-00	METAL	10K	5%	1/10W
R61	1-216-073-00	METAL	10K	5%	1/10W
R62	1-216-073-00	METAL	10K	5%	1/10W
R63	1-216-689-11	METAL	39K	5%	1/10W
R64	1-216-689-11	METAL	39K	5%	1/10W
R65	1-216-073-00	METAL	10K	5%	1/10W
R66	1-216-065-00	METAL	4.7K	5%	1/10W
R67	1-216-073-00	METAL	10K	5%	1/10W
R68	1-216-073-00	METAL	10K	5%	1/10W
R69	1-216-073-00	METAL	10K	5%	1/10W
R70	1-216-073-00	METAL	10K	5%	1/10W
R71	1-216-073-00	METAL	10K	5%	1/10W
R72	1-216-073-00	METAL	10K	5%	1/10W
R73	1-216-073-00	METAL	10K	5%	1/10W
R74	1-216-073-00	METAL	10K	5%	1/10W
R75	1-216-073-00	METAL	10K	5%	1/10W
R76	1-216-073-00	METAL	10K	5%	1/10W
R77	1-216-073-00	METAL	10K	5%	1/10W
R78	1-216-073-00	METAL	10K	5%	1/10W
R79	1-216-073-00	METAL	10K	5%	1/10W
R300	1-216-073-00	METAL	10K	5%	1/10W
R301	1-216-073-00	METAL	10K	5%	1/10W
R302	1-216-073-00	METAL	10K	5%	1/10W
R303	1-216-073-00	METAL	10K	5%	1/10W
R304	1-216-073-00	METAL	10K	5%	1/10W
R305	1-216-073-00	METAL	10K	5%	1/10W
R306	1-216-073-00	METAL	10K	5%	1/10W
R307	1-216-073-00	METAL	10K	5%	1/10W
R312	1-216-089-91	METAL	47K	5%	1/10W
R320	1-216-073-00	METAL	10K	5%	1/10W
R321	1-216-073-00	METAL	10K	5%	1/10W
R322	1-216-073-00	METAL	10K	5%	1/10W
R323	1-216-073-00	METAL	10K	5%	1/10W
R324	1-216-073-00	METAL	10K	5%	1/10W
R325	1-216-073-00	METAL	10K	5%	1/10W
R326	1-216-073-00	METAL	10K	5%	1/10W
R327	1-216-073-00	METAL	10K	5%	1/10W
R328	1-216-073-00	METAL	10K	5%	1/10W
R329	1-216-073-00	METAL	10K	5%	1/10W
R333	1-216-073-00	METAL	10K	5%	1/10W
R334	1-216-073-00	METAL	10K	5%	1/10W
R335	1-216-037-00	METAL	330	5%	1/10W
R340	1-216-073-00	METAL	10K	5%	1/10W
R341	1-216-073-00	METAL	10K	5%	1/10W
R342	1-216-073-00	METAL	10K	5%	1/10W
R343	1-216-073-00	METAL	10K	5%	1/10W
R344	1-216-073-00	METAL	10K	5%	1/10W
R345	1-216-073-00	METAL	10K	5%	1/10W
R346	1-216-073-00	METAL	10K	5%	1/10W
R347	1-216-073-00	METAL	10K	5%	1/10W
R348	1-216-073-00	METAL	10K	5%	1/10W
R350	1-216-073-00	METAL	10K	5%	1/10W
R351	1-216-073-00	METAL	10K	5%	1/10W

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Ref.No	Part No.	Description			Remark
R352	1-216-073-00	METAL	10K	5%	1/10W
R354	1-216-073-00	METAL	10K	5%	1/10W
R355	1-216-073-00	METAL	10K	5%	1/10W
R356	1-216-097-00	METAL	100K	5%	1/10W
R360	1-216-089-91	METAL	47K	5%	1/10W
R361	1-216-089-91	METAL	47K	5%	1/10W
R362	1-216-089-91	METAL	47K	5%	1/10W
R363	1-216-089-91	METAL	47K	5%	1/10W
R364	1-216-089-91	METAL	47K	5%	1/10W
R365	1-216-089-91	METAL	47K	5%	1/10W
R366	1-216-089-91	METAL	47K	5%	1/10W
R367	1-216-089-91	METAL	47K	5%	1/10W
R370	1-216-089-91	METAL	47K	5%	1/10W
R371	1-216-089-91	METAL	47K	5%	1/10W
R372	1-216-089-91	METAL	47K	5%	1/10W
R373	1-216-089-91	METAL	47K	5%	1/10W
R374	1-216-089-91	METAL	47K	5%	1/10W
R375	1-216-089-91	METAL	47K	5%	1/10W
R376	1-216-089-91	METAL	47K	5%	1/10W
R377	1-216-089-91	METAL	47K	5%	1/10W
R380	1-216-073-00	METAL	10K	5%	1/10W
R381	1-216-073-00	METAL	10K	5%	1/10W
R382	1-216-073-00	METAL	10K	5%	1/10W
R383	1-216-073-00	METAL	10K	5%	1/10W
R384	1-216-073-00	METAL	10K	5%	1/10W
R385	1-216-073-00	METAL	10K	5%	1/10W
R386	1-216-073-00	METAL	10K	5%	1/10W
R387	1-216-073-00	METAL	10K	5%	1/10W
R400	1-216-022-00	METAL	75	5%	1/10W
R401	1-216-061-00	METAL	3.3K	5%	1/10W
R403	1-216-051-00	METAL	1.2K	5%	1/10W
R404	1-216-033-00	METAL	220	5%	1/10W
R406	1-216-093-00	METAL	68K	5%	1/10W
R407	1-216-049-00	METAL	1K	5%	1/10W
R408	1-216-055-00	METAL	1.8K	5%	1/10W
R409	1-216-065-00	METAL	4.7K	5%	1/10W
R410	1-216-053-00	METAL	1.5K	5%	1/10W
R411	1-216-067-00	METAL	5.6K	5%	1/10W
R412	1-216-067-00	METAL	5.6K	5%	1/10W
R413	1-216-097-00	METAL	100K	5%	1/10W
R414	1-216-097-00	METAL	100K	5%	1/10W
R415	1-216-041-00	METAL	470	5%	1/10W
R416	1-216-065-00	METAL	4.7K	5%	1/10W
R417	1-216-051-00	METAL	1.2K	5%	1/10W
R418	1-216-049-00	METAL	1K	5%	1/10W
R419	1-216-049-00	METAL	1K	5%	1/10W
R420	1-216-049-00	METAL	1K	5%	1/10W
R421	1-216-065-00	METAL	4.7K	5%	1/10W
R422	1-216-065-00	METAL	4.7K	5%	1/10W
R430	1-216-073-00	METAL	10K	5%	1/10W
R431	1-216-073-00	METAL	10K	5%	1/10W
R432	1-216-073-00	METAL	10K	5%	1/10W
R433	1-216-073-00	METAL	10K	5%	1/10W
R439	1-216-073-00	METAL	10K	5%	1/10W
R440	1-216-073-00	METAL	10K	5%	1/10W
R441	1-216-073-00	METAL	10K	5%	1/10W
R445	1-216-097-00	METAL	100K	5%	1/10W
R446	1-216-037-00	METAL	330	5%	1/10W
R447	1-216-049-00	METAL	1K	5%	1/10W
R450	1-216-073-00	METAL	10K	5%	1/10W
R451	1-216-017-00	METAL	47	5%	1/10W
R452	1-216-049-00	METAL	1K	5%	1/10W
R453	1-216-065-00	METAL	4.7K	5%	1/10W
R454	1-216-065-00	METAL	4.7K	5%	1/10W
R455	1-216-065-00	METAL	4.7K	5%	1/10W
R456	1-216-065-00	METAL	4.7K	5%	1/10W
R457	1-216-049-00	METAL	1K	5%	1/10W
R458	1-216-065-00	METAL	4.7K	5%	1/10W
R459	1-216-049-00	METAL	1K	5%	1/10W
R510	1-216-089-91	METAL	47K	5%	1/10W
R511	1-216-089-91	METAL	47K	5%	1/10W
R512	1-216-089-91	METAL	47K	5%	1/10W
R513	1-216-089-91	METAL	47K	5%	1/10W
R514	1-216-089-91	METAL	47K	5%	1/10W
R515	1-216-089-91	METAL	47K	5%	1/10W
R531	1-216-073-00	METAL	10K	5%	1/10W
R532	1-216-081-00	METAL	22K	5%	1/10W
R533	1-216-073-00	METAL	10K	5%	1/10W
R534	1-216-073-00	METAL	10K	5%	1/10W
R535	1-216-049-00	METAL	1K	5%	1/10W
R600	1-216-073-00	METAL	10K	5%	1/10W
R601	1-216-073-00	METAL	10K	5%	1/10W
R602	1-216-073-00	METAL	10K	5%	1/10W
R603	1-216-073-00	METAL	10K	5%	1/10W
R604	1-216-073-00	METAL	10K	5%	1/10W
R605	1-216-073-00	METAL	10K	5%	1/10W
R606	1-216-073-00	METAL	10K	5%	1/10W
R607	1-216-073-00	METAL	10K	5%	1/10W
R608	1-216-073-00	METAL	10K	5%	1/10W
R609	1-216-073-00	METAL	10K	5%	1/10W
R610	1-216-073-00	METAL	10K	5%	1/10W
R611	1-216-073-00	METAL	10K	5%	1/10W
R612	1-216-073-00	METAL	10K	5%	1/10W
R613	1-216-073-00	METAL	10K	5%	1/10W
R614	1-216-073-00	METAL	10K	5%	1/10W
R615	1-216-073-00	METAL	10K	5%	1/10W
R616	1-216-073-00	METAL	10K	5%	1/10W
R617	1-216-073-00	METAL	10K	5%	1/10W
R618	1-216-073-00	METAL	10K	5%	1/10W
R619	1-216-073-00	METAL	10K	5%	1/10W
R620	1-216-073-00	METAL	10K	5%	1/10W
R621	1-216-073-00	METAL	10K	5%	1/10W
R622	1-216-073-00	METAL	10K	5%	1/10W
R623	1-216-073-00	METAL	10K	5%	1/10W
R624	1-216-073-00	METAL	10K	5%	1/10W
R625	1-216-073-00	METAL	10K	5%	1/10W
R626	1-216-073-00	METAL	10K	5%	1/10W
R627	1-216-073-00	METAL	10K	5%	1/10W
R628	1-216-073-00	METAL	10K	5%	1/10W
R629	1-216-073-00	METAL	10K	5%	1/10W
R630	1-216-073-00	METAL	10K	5%	1/10W
R631	1-216-073-00	METAL	10K	5%	1/10W
R632	1-216-073-00	METAL	10K	5%	1/10W
R633	1-216-073-00	METAL	10K	5%	1/10W
R634	1-216-073-00	METAL	10K	5%	1/10W
R635	1-216-073-00	METAL	10K	5%	1/10W
R636	1-216-073-00	METAL	10K	5%	1/10W
R637	1-216-073-00	METAL	10K	5%	1/10W
R638	1-216-073-00	METAL	10K	5%	1/10W
R639	1-216-073-00	METAL	10K	5%	1/10W
R640	1-216-073-00	METAL	10K	5%	1/10W
R641	1-216-073-00	METAL	10K	5%	1/10W
R642	1-216-073-00	METAL	10K	5%	1/10W
R643	1-216-073-00	METAL	10K	5%	1/10W
R644	1-216-073-00	METAL	10K	5%	1/10W
R645	1-216-073-00	METAL	10K	5%	1/10W
R646	1-216-073-00	METAL	10K	5%	1/10W
R647	1-216-073-00	METAL	10K	5%	1/10W
R648	1-216-073-00	METAL	10K	5%	1/10W
R649	1-216-073-00	METAL	10K	5%	1/10W

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No	Part No.	Description			Remark
R650	1-216-073-00	METAL	10K	5%	1/10W
R651	1-216-073-00	METAL	10K	5%	1/10W
R652	1-216-073-00	METAL	10K	5%	1/10W
R653	1-216-073-00	METAL	10K	5%	1/10W
R654	1-216-073-00	METAL	10K	5%	1/10W
R655	1-216-073-00	METAL	10K	5%	1/10W
R656	1-216-073-00	METAL	10K	5%	1/10W
R657	1-216-073-00	METAL	10K	5%	1/10W
R658	1-216-073-00	METAL	10K	5%	1/10W
R659	1-216-073-00	METAL	10K	5%	1/10W
R660	1-216-073-00	METAL	10K	5%	1/10W
R661	1-216-073-00	METAL	10K	5%	1/10W
R662	1-216-073-00	METAL	10K	5%	1/10W
R663	1-216-073-00	METAL	10K	5%	1/10W
R664	1-216-065-00	METAL	4.7K	5%	1/10W
R665	1-216-065-00	METAL	4.7K	5%	1/10W
R666	1-216-065-00	METAL	4.7K	5%	1/10W
R667	1-216-065-00	METAL	4.7K	5%	1/10W
R668	1-216-065-00	METAL	4.7K	5%	1/10W
R669	1-216-065-00	METAL	4.7K	5%	1/10W
R670	1-216-065-00	METAL	4.7K	5%	1/10W
R671	1-216-065-00	METAL	4.7K	5%	1/10W
R672	1-216-065-00	METAL	4.7K	5%	1/10W
R673	1-216-065-00	METAL	4.7K	5%	1/10W
R674	1-216-065-00	METAL	4.7K	5%	1/10W
R675	1-216-065-00	METAL	4.7K	5%	1/10W
R676	1-216-065-00	METAL	4.7K	5%	1/10W
R677	1-216-065-00	METAL	4.7K	5%	1/10W
R678	1-216-065-00	METAL	4.7K	5%	1/10W
R679	1-216-065-00	METAL	4.7K	5%	1/10W
R680	1-216-065-00	METAL	4.7K	5%	1/10W
R681	1-216-065-00	METAL	4.7K	5%	1/10W
R682	1-216-065-00	METAL	4.7K	5%	1/10W
R683	1-216-065-00	METAL	4.7K	5%	1/10W
R684	1-216-089-91	METAL	47K	5%	1/10W
R685	1-216-089-91	METAL	47K	5%	1/10W
R686	1-216-089-91	METAL	47K	5%	1/10W
R687	1-216-089-91	METAL	47K	5%	1/10W
R688	1-216-089-91	METAL	47K	5%	1/10W
R689	1-216-089-91	METAL	47K	5%	1/10W
R690	1-216-089-91	METAL	47K	5%	1/10W
R691	1-216-089-91	METAL	47K	5%	1/10W
R692	1-216-089-91	METAL	47K	5%	1/10W
R693	1-216-089-91	METAL	47K	5%	1/10W
R694	1-216-089-91	METAL	47K	5%	1/10W
R695	1-216-089-91	METAL	47K	5%	1/10W
R696	1-216-065-00	METAL	4.7K	5%	1/10W
R697	1-216-065-00	METAL	4.7K	5%	1/10W
R698	1-216-065-00	METAL	4.7K	5%	1/10W
R699	1-216-065-00	METAL	4.7K	5%	1/10W
R700	1-216-065-00	METAL	4.7K	5%	1/10W
R701	1-216-065-00	METAL	4.7K	5%	1/10W
R702	1-216-097-00	METAL	100K	5%	1/10W
R703	1-216-097-00	METAL	100K	5%	1/10W
		<VARIABLE RESISTOR>			
RV1	1-238-853-11	RES, ADJ, CERMET 1K			
		<SWITCH>			
S1	1-571-187-11	SWITCH, TACTIL (REFLOW TYPE)			

Ref.No	Part No.	Description	Remark
		<CRYSTAL>	
X1	1-577-182-11	OSCILLATOR, CRYSTAL	
X501	1-567-160-21	OSCILLATOR, CERAMIC	

****

	*1-620-916-11	PE-18 BOARD ***********
	8-719-918-87	DIODE BG5531K

****

MISCELLANEOUS
****

	⚠1-413-466-12	REGULATOR, SWITCHING
	⚠1-526-813-22	INLET 3P, AC
	1-540-256-21	SOCKET, SYNCHRONIZE
	1-541-891-11	MOTOR, DC FAN (WITH FG)
	*1-547-463-11	FILTER UNIT, OPTICAL
	1-561-284-21	SOCKET, DIN 8P
	*1-562-149-11	HOUSING, CONNECTOR 4P
	1-562-222-21	RECEPTACLE, CONNECTOR 6P
	1-563-929-11	CONNECTOR, ROUND TYPE (RF) 4P
	*1-565-122-11	HOUSING, CONNECTOR 3P
	*1-565-123-11	HOUSING, CONNECTOR 4P
	*1-565-164-11	TERMINAL, SOLDERLESS
	1-691-629-11	CONNECTOR (ROUND TYPE) 20P
	1-764-849-11	JACK
	1-944-580-14	HARNESS (LED ASSY)
	*1-949-642-11	HARNESS (ZOOM)
	*1-949-643-11	HARNESS (IRIS)
	*1-953-182-12	HARNESS, SUB (DC1)
	*1-953-183-12	HARNESS, SUB (DC2)
	*1-953-184-12	HARNESS, SUB (AC)

****

ACCESSORY & PACKING MATERIALS
****

	A-8260-876-A	RM-S72 OVERALL ASSY
	A-8310-128-C	DISK ASSY
	1-556-664-00	CABLE, INTERFACE
	⚠1-590-910-11	CORD SET, POWER
	1-765-170-11	CABLE, CAMERA
	*3-175-850-03	CUSHION
	*3-184-119-01	SLEEVE
	*3-184-127-01	SHEET (A)
	3-184-128-02	LABEL, DISK
	*3-184-129-01	SPACER
	*3-184-130-02	INDIVIDUAL CARTON
	3-758-306-11	OPERATING, INSTRUCTION

****

Ref.No	Part No.	Description	Remark
		HARDWARE LIST *************	
	7-621-772-10	SCREW +B 2X4	
	7-621-772-18	SCREW +B 2X4	
	7-621-773-86	SCREW +B 2.6X4	
	7-621-773-95	SCREW +B 2.6X6	
	7-621-775-40	SCREW +B 2.6X8	
	7-627-450-98	SCREW, PRECISION +K 1.7X5	
	7-627-452-27	+K 2X4	
	7-627-452-28	SCREW, PRECISION +K 2X4	
	7-627-454-37	SCREW, PRECISION +K 2.6X5	
	7-627-552-58	SCREW, PRECISION +P 1.7X5	
	7-682-150-15	SCREW +P 3X12	
	7-682-247-04	SCREW +RK 3X6	
	7-682-546-04	SCREW +B 3X5	
	7-682-547-04	SCREW +B 3X6	
	7-682-555-04	SCREW +B 3X30	
	7-682-559-04	SCREW +B 4X5	
	7-682-660-09	SCREW +PS 4X6	
	7-682-961-01	SCREW +PSW 4X8	
	7-685-144-11	SCREW +P 3X5 TYPE2 NON-SLIT	
	7-685-660-79	SCREW +BVTP 4X10 TYPE2 N-S	
	7-685-903-11	SCREW +PTPWH 3X6 (TYPE2)	

****

Ref.No	Part No.	Description	Remark

SECTION 7
ELECTRICAL ADJUSTMENT

7-1. SERVICE MODE OF CAMERA BLOCK

* The menu of the DKC-5000 is managed by a processor and displayed by a character generator that the processor has.
The keys on the rear panel of a camera and the keys of a remote control unit (RM-S72) are coded by the camera and sent to the processor.
The processor sends a command to the camera as required and can change the data and mode of the camera. Therefore, the camera control menu cannot be displayed by only turning on the power to the camera. The camera independent mode (service mode) is thus provided. How to enter the service mode is described below.

7-1-1. Entering the Service Mode

- Set the OPE/ADJ switch (on the AT-83 board) to ADJ and turn on the power.
- A non-inversion character is displayed on the monitor for about two seconds. The camera independent mode is then entered.

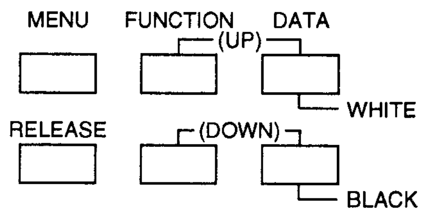
CAMERA
XXXXXXXX : Version and date
EP OK : EEPROM operation check
VD OK : VD signal input check

- Set the OPE/ADJ switch to OPE to display the service mode in a menu.
- The EVR operation can be performed when the OPE/ADJ switch is set to ADJ. (Refer to 7-1-9, "Adjust Data".)

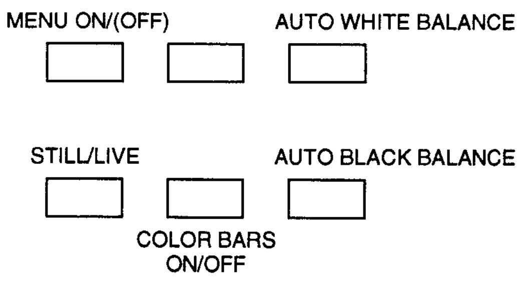
7-1-2. Camera Independent Mode Operation

(1) Display keys on the rear panel of camera

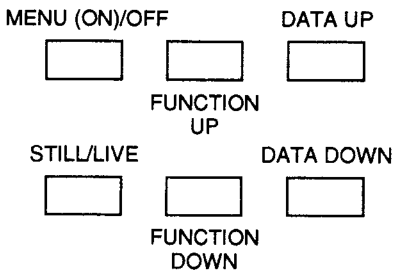
[Rear panel]



(2) State during menu OFF setting
- Other keys cannot be pressed while a color-bar signal is displayed.
- In the (FLASH ON) and (STILL) modes, the automatic white balance corresponding to a FLASH signal is adjusted.
(Notice that the setting is not completed when no FLASH signal is output from pin ⑮ DP).



(3) State during menu ON setting
- Move the cursor at the left end using FUNCTION UP and DOWN keys and select the item to be changed.
- Change the data of the selected item using DATA UP and DOWN keys.
- A preset value is obtained (not including ON/OFF data) when the DATA UP and DOWN keys are pressed simultaneously.



7-1-3. Key Operation of Remote Control Unit (RM-S72)

- STANDBY : STILL/LIVE selection STANDBY
- DISP : IRIS display ON/OFF DISP
- + : IRIS DATA UP// +
- – : IRIS DATA DOWN –

* Other keys do not operate.

[IRIS data and its corresponding lens focus value]

IRIS data	Lens focus value
50	16
75	11
100	8
125	5.6
150	4
175	2.8
200	2.0
225	1.4

7-1-4. Menu Display

* Pages 2 and 3 correspond to the STILL and LIVE camera modes and can be set each independently. Which mode should be set is selected by the menu mode.

* The alphanumeric character in parentheses is the value obtained when the DATA UP and DOWN keys are pressed simultaneously.

- Page 0

0/7 [[RESET]]
RESET
A/D DISP ON/OFF

* When the A/D DISP mode is set to ON, AGC data, CCD iris data, and electronic shutter data are displayed in the "*****" position. (The menu is displayed even if this mode is set to OFF.)

* The A/D DISP mode is always set to OFF when the power is turned on.

- Page 1

1/7 [[COLOR]]
LIVE
C. TEMP 5600K/3200K
RED +127····(0)····–127: RED GAIN, AWB RED GAIN
BLUE +127····(0)····–127: BLUE GAIN, AWB BLUE GAIN
STILL
FLASH [ON/OFF]
RED +127····(0)····–127 +127····(0)····–127
: FLASH RED GAIN, FLASH AWB RED GAIN
BLUE +127····(0)····–127 +127····(0)····–127
: FLASH BLUE GAIN, FLASH AWB BLUE GAIN

* The RED and BLUE modes below FLASH are displayed only when the FLASH mode is set to ON. They can also be set.

- Page 2

2/7[[SET UP 1]]

MENU MODE	[STILL/LIVE]
SENS	AUTO/MANUAL
MANUAL	(0), 1, 2····18 dB
SHUTTER	AUTO/MANUAL
MANUAL	4", 2", 1", 1/2, 1/4, 1/8, 1/15, (1/25), 1/50, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000. X (when the FLASH mode is ON)

* In the STILL mode, the gain and shutter are fixed to MANUAL.

* The manual shutter in the LIVE mode is 1/25 to 1/10000.

* When the gain is set to MANUAL, the next manual gain value can be changed.

* When the shutter is set to MANUAL, the next manual shutter value can be changed.

* When the shutter is set to AUTO, the exposure value is automatically adjusted so that it is proper between 1/50 and 1/10000.

* For the speed lower than 1/25 in a shutter manual, the electric charge accumulated in a CCD is read for every set time. (Flickering appears on the monitor screen.)

[SENS and its corresponding ISO display]

SENS	ISO
0	100
6	200
12	400
18	800

- Page 3

3/7[[SET UP]]

MENU MODE	[STILL/LIVE]
GAMMA	ON/OFF
KNEE	ON/OFF
W.CLIP	ON/OFF
FRM/FLD	FRM/FLD

- Page 4

4/7[[BLACK]]

M. PED	+127····(0)····−127:MASTER PEDESTAL
R. PED	+127····(0)····−127:RED PEDESTAL
B. PED	+127····(0)····−127:BLUE PEDESTAL
R. BLACK	+127····(0)····−127:RED BLACK TRACKING
G. BLACK	+127····(0)····−127:GREEN BLACK TRACKING
B. BLACK	+127····(0)····−127:BLUE BLACK TRACKING
BB CP	+127····0····−127 +127····0····−127 :R and B correction values of automatic black balance

* The BB CP mode is used to correct the deviation between channels in a circuit during automatic black balance.

Select this item by the cursor and press the DATA UP or DOWN key. The correction value can be then measured.

※ For except the camera adjustment, do not perform this operation.

- Page 5

5/7[[LENS]]

IRIS. L	0····(225)····255	:IRIS LIVE
IRIS. S	0····(125)····255	:IRIS STILL
FOCUS	0····(128)····255	:FOCUS
ZOOM	(0)····255	:ZOOM

* The value in parentheses is obtained when the power is turned on.

- Page 6

6/7[[EP H]]

* The contents of the high-order bytes of an EEPROM (16 bits × 64 words) are displayed. The EVR data for adjustment is primarily stored.

(00h) (01h) (02H)····(07h)
(08h) (09h)
(10h)
,,,
(38h) (3Fh)

- Page 7

7/7[[EP L]]

* The contents of the low-order bytes of an EEPROM (16 bits × 64 words) are displayed in a map. The user data is primarily stored.

(00h) (01h) (02h)····(07h)
(08h) (09h)
,,,
(38h) (3Fh)

7-1-5. 0'th Page Reset

* The state of a reset menu on the 0'th page is as shown below.

- 0/7[[RESET]]

RESET
A/D DISP **** (Not preset.)

- 1/7[[COLOR]]

LIVE		
C. TEMP	3200K	
RED	000	000
BLUE	000	000
STILL		
FLASH[ON]		
RED	000	000
BLUE	000	000

- 2/7[[SET UP1]]

MENU MODE	[LIVE]	[STILL]
SENS	AUTO	
MANUAL	00DB	00DB
SHUTTER	AUTO	
MANUAL	1/25	X

- 3/7[[SET UP2]]

MENU MODE	[LIVE]	[STILL]
GAMMA	ON	ON
KNEE	ON	ON
W. CLIP	ON	ON
FRM/FLD	FRM	FRM

- 4/7[[BLACK]]

M. PED	000
R. PED	000
B. PED	000
R. BLACK	000
G. BLACK	000
B. BLACK	000
BB CP	**** **** (Not preset.)

- 5/7[[LENS]]

IRIS. L	225
IRIS. S	125
FOCUS	128
ZOOM	000

7-1-6. Deviation Correction of Black Balance Circuit

* In the black balance adjustment, the deviation between channels in a sample-and-hold circuit is corrected by software so as to improve the convergence precision. In general, after the pedestal, black tracking levels were adjusted during overall adjustment, the black level is sampled and held, then converted from analog to digital. The deviation of the A/D value at that time shall be the deviation between channels in a circuit. The A/D value is used as the correction value during black balance adjustment.
  Move the cursor to the BB CP item on page 4 of the camera independent menu and press the DATA UP and DOWN keys. The deviation in the black balance circuit is then measured.
  Note: For except immediately after the R/G/B pedestal and R/G/B black levels were all adjusted during camera adjustment, do not perform this adjustment.
* When M.PED, R.PED, and B.PED modes, and R.BLACK, G.BLACK, and B.BLACK modes are not "000", message "CP:NG USER 000?" is displayed. The correction value is not then measured.
* When the measured deviation is too high, message "BB CP:NG ADJ ???" is displayed. The correction value is not then updated.
* In the camera independent menu, the correction value measurement and its result are displayed. To change the correction value freely, change it according to No. 41 [CP(R-G)] and No. 42 [CP(B-G)] in 5-1-9, "Adjust Data".

(1) Alarm display during correction value measurement

* Take care that no light enters the CCD.
  For an electrically-driven iris, measure the correction value after the iris was closed automatically.

(2) Black balance alarm display

Message	Description
CP:NG IRIS CLOSE ?	Is the CCD not exposed to light with the iris not closed?
CP:NG USER:000 ?	M/R/B.PED modes and R/G/B.BLACK modes are not "000". The correction value can be measured only when all the modes are "000".
CP:NG ADJ:???	The correction value is too high. Is the ADJ DATA adjusted properly?

(3) Black balance

* Take care that no light enters the CCD when adjusting the black balance. For an electrically-driven iris, adjust the black balance after the iris was closed automatically. (It takes a few seconds to adjust the black balance.)

* The contents of each alarm are more fully classified than in the processor mode.

(4) Black balance alarm display

Message	Description
BLACK :OK	The black balance was adjusted normally.
BLACK :NG	The black balance couldn't be adjusted. If this display appears after adjustment was repeated, internal inspection is required.
BLACK :NG IRIS CLOSE ?	Is the CCD not exposed to light with the iris not closed?
BLACK :NG MOGURI ???	R, G, and B pedestal levels did not change even if the master pedestal level is changed. (A creep check is no good.)
BLACK :NG TRACK ???	The black tracking couldn't be adjusted.

(5) White balance

* Shoot a white subject on the whole screen to obtain a proper brightness when adjusting the white balance.
(Take care that an extremely high-luminance subject is not shot on the screen.)

(6) White balance alarm display

Message	Description
WHITE: OK	The white balance was adjusted normally.
WHITE: NG	The white balance couldn't be adjusted. (If this display appears after adjustment was repeated, internal inspection is required.)
WHITE: NG LEVEL: LOW	The quantity of incident light is insufficient.
WHITE: NG LEVEL: HI	Is the quantity of incident light too much or is a high-luminance subject partially shot on the screen?
WHITE: NG C TEMP:LOW	The color temperature is too low. (The red is too strong or the blue is too weak.)
WHITE: NG C TEMP:HIGH	The color temperature is too high. (The blue is too strong or the red is too weak.)
WHITE: NG C TEMP:???	The color temperature is abnormal. (The read and blue are too strong or weak.)

7-1-7. Initial State of AT-83 Board(EVR)

- Initial state of AT-83 board of DKC-5000 camera block(EVR)

The value in brackets ([ ]) is unused.

01 :R. BLACK	:128	06 :[2:2]	:128	11 :AGC. REF	:128	16 :R. PRE KNEE	:225
02 :G. BLACK	:128	07 :[2:3]	:128	12 :STEP REF	:100	17 :G. PRE KNEE	:225
03 :B. BLACK	:128	08 :[2:4]	:128	13 :G. GAIN	:110	18 :B. PRE KNEE	:225
04 :[:]	:128	09 :AGC Max	:120	14 :R. GAIN	:110	19 :R. PEDESTAL	:095
05 :[2:1]	:128	10 :AGC Min	:034	15 :B. GAIN	:110	20 :G. PEDESTAL	:095
21 :B. PEDESTAL	:095	26 :[4:8]	:128	31 :[5:6]	:128	36 :[2:C]	:128
22 :GAMMA	:154	27 :[4:9]	:128	32 :CCD IRIS REF	:110	37 :Min-WB	:100
23 :KNEE	:200	28 :[4:A]	:128	33 :[5:B]	:128	38 :Max-SA	:003
24 :WHITE CLIP	:200	29 :[4:C]	:128	34 :R. CRIP	:110	39 :Max-BB	:224
25 :[4:7]	:128	30 :[5:5]	:128	35 :B. CRIP	:110	40 :Max-WB	:133
41 :CP-RG	:128						
42 :CP-BG	:128						

7-1-8. Assignment List of Camera Control Unit and Microcomputer Port (CXP80P116Q2-DKC-Verx.xx)

No.	PORT NAME	I/O	REMARKS	No.	PORT NAME	I/O	REMARKS
01	PA 1	O	A/D SEL2	41	SI 1	I	SI 1
02	PA 2	O	A/D SEL1	42	SO 1	O	SO 1
03	PB 7	O	D/A CS 5	43	SCK 1	O	SCK 1
04	PB 6	O	D/A CS 4	44	PF 3	I	EEPROM BUSY
05	PB 5	O	D/A CS 3	45	PF 2	I	not used
06	PB 4	O	D/A CS 2	46	PF 1	I	not used
07	PB 3	O	D/A CS 1	47	PF 0	I	not used
08	PB 2	O	SHUTT STB	48	AN 3	I	not used
09	PB 1	O	(DISCHARGE)	49	AN 2	I	not used
10	PB 0	O	ERR GAIN SEL	50	AN 1	I	GRAB
11	PC 7	O	CHARA STB	51	AN 0	I	A/D
12	PC 6	O	CHARA CS	52	AVss	I	AVdd
13	PC 5	O	EEPROM RST	53	AVref	I	AVref
14	PC 4	O	EEPROM RST	54	AVdd	I	AVdd
15	PC 3	O	not used	55	PG 7	I	not used
16	PC 2	O	CHRA OSC	56	PG 6	I	not used
17	PC 1	O	SOUT DP	57	PG 5	I	not used
18	PC 0	O	not used	58	PG 4	I	OPE/ADJ
19	PD 7	O	MMY STNDBY	59	PG 3	I	BLKG
20	PC 6	O	IRIS CROSE	60	PG 2	I	WEN
21	PD 5	O	not used	61	PG 1	I	VD
22	PD 4	O	HTSG	62	PG 0	I	(PRINT SW)
23	PD 3	I	LS 1	63	PE 7	O	FLD/FRM
24	PD 2	I	LS 2	64	PE 6	O	CAM/BARS
25	PD 1	I	LS 3	65	PE 5	O	CTEMP 5600/3200
26	PD 0	I	LS 4	66	PE 4	O	(low fixed)
27	PH 3	O	not used	67	PE 3	O	AGC/STEP
28	PH 2	O	not used	68	PE 2	O	(high fixed)
29	PH 1	O	not used	69	INT 2	I	VD INT
30	PH 0	O	not used	70	PE0/PEINT0	I	SIN DP
31	MP	I	MP	71	NMI	I	NMI
32	/RST	I/O	/RESET	72	Vdd		Vdd
33	Vss		GND	73	Vss		Vss
34	XTAL	I	XTAL	74	N.C		N.C
35	EXTAL	O	EXTAL	75	PA 7	O	CH SEL3
36	/CS 0	I	not used	76	PA 6	O	CH SEL2
37	/SI 0	I	not used	77	PA 5	O	CH SEH1
38	/SO 0	O	not used	78	PA 4	O	S/H AREA3
39	/SCK 0	I/O	not used	79	PA 3	O	S/H AREA2
40	/INT 1	I	FLASH	80	PA 2	O	S/H AREA1

7-1-9. Adjust Data

*CSCH is the internal code of a microcomputer.

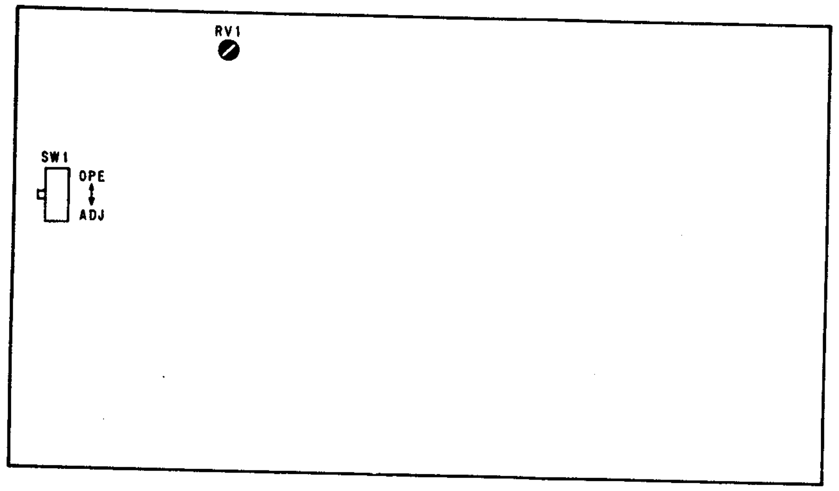
EVR No.	CSCH	D/A OUT	BOARD	ADJ NAME	REMARKS
01	12	IC12 ⑲	AT-83	R.BLACK	R.BLACK TRACKING
02	13	IC12 ②	AT-83	G.BLACK	G.BLACK TRACKING
03	14	IC12 ③	AT-83	B.BLACK	B.BLACK TRACKING
04	11	IC12 ⑱	AT-83		
05	21	IC2 ⑱	PR-188		
06	22	IC2 ⑲	PR-188		
07	23	IC2 ②	PR-188		
08	24	IC2 ③	PR-188		
09	25	IC2 ④	PR-188	AGC MAX	GAIN MAX LEVEL
10	26	IC2 ⑤	PR-188	AGC MIN	GAIN MIN LEVEL
11	27	IC2 ⑥	PR-188	AGC REF	AGC REFERENCE LEVEL
12	27	IC2 ⑥	PR-188	STEP REF	STEP GAIN REFERENCE LEVEL
13	32	IC3 ⑲	PR-188	G.GAIN	
14	33	IC3 ②	PR-188	R.GAIN	
15	34	IC3 ③	PR-188	B.GAIN	
16	37	IC3 ⑥	PR-188	R.PRKNEE	R.PRE KNEE
17	38	IC3 ⑦	PR-188	G.PRKNEE	G.PRE KNEE
18	39	IC3 ⑧	PR-188	B.PRKNEE	B.PRE KNEE
19	3A	IC3 ⑨	PR-188	R.PEDESTAL	R.PEDESTAL
20	3B	IC3 ⑫	PR-188	G.PEDESTAL	G.PEDESTAL
21	3C	IC3 ⑬	PR-188	B.PEDESTAL	B.PEDESTAL
22	44	IC4 ③	PR-188	GAMMA	
23	45	IC4 ④	PR-188	KNEE	
24	46	IC4 ⑤	PR-188	W.CLIP	WHITE CLIP
25	47	IC4 ⑥	PR-188		
26	48	IC4 ⑦	PR-188		
27	49	IC4 ⑧	PR-188		
28	4A	IC4 ⑨	PR-188		
29	4C	IC4 ⑬	PR-188		
30	51	IC23 ⑱	AT-83		
31	52	IC23 ⑲	AT-83		
32	FF	RAM DATA		CCD IRIS	CCD IRIS REFERENCE LEVEL
33	5B	IC23 ⑫	AT-83		
34	2A	IC2 ⑨	PR-188	R.CRIP	R CRIP LEVEL at AGC IC input
35	2B	IC2 ⑫	PR-188	B.CRIP	B CRIP LEVEL at AGC IC input
36	5C	IC23 ⑬	AT-83		
37	FF	RAM DATA		MIN WB	AUTO WB MIN(G-REF DC)
38	FF	RAM DATA		MAX SA	AUTO BB MAX[Y(1/50)-Y(1/2000)]
39	FF	RAM DATA		MAX BB	AUTO BB MAX(Y-REF DC)
40	FF	RAM DATA		MAX WB	AUTO WB MAX(G-REF DC_0)
41	FF	RAM DATA		CP(R-G)	AUTO BB COMPENSATION(R-G)
42	FF	RAM DATA		CP(B-G)	AUTO BB COMPENSATION(B-G)

7-1-10. Switch Setting before Adjustment

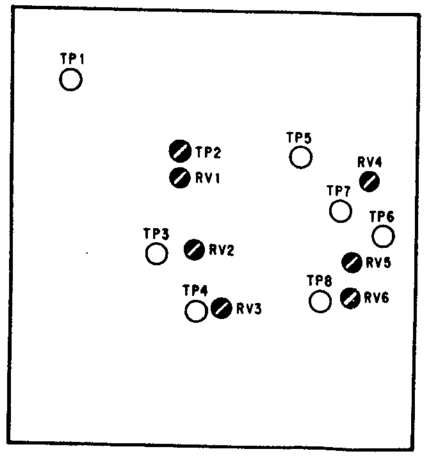
Menu screen:
GAIN: STEP
STEP 0 db
C.TEMP: 3200 K
WHT. BAL: MANU
R. GAIN +00
B. GAIN +00
CCD IRIS: OFF
SHUTTER: OFF

AT-83 board:
SW1(ADJ/OPE): ADJ

Note: After adjustment is completed, return the OPE/ADJ switch (SW1) on the AT-83 board to OPE.



AT-83 Board(Soldering Side)



TG-133 Board(Component Side)

7-2. CAMERA BLOCK ADJUSTMENT(AT-83 BOARD)

- Preparation

Subject : Pattern box (100% white pattern), (gray scale A-6026-130-B), and (chart J-6026-100-A) and (chart J-6029-140-B)
Measurement equipment : Oscilloscope and waveform monitor
Extension board : J-6097-120-A (EX-329) and J-6097-110-A (EX-328)
: Camera block and processor block

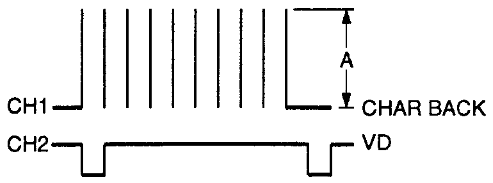
* Entering the service mode

(1) Set the OPE/ADJ switch (SW1) on the AT-83 board to ADJ and turn on the processor power.
(2) Set the OPE/ADJ switch to OPE again.

* Perform the adjustments below in the LIVE mode unless otherwise specified.

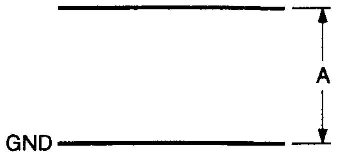
7-2-1. Turn on the power in the normal (OPE) mode and confirm that the menu is displayed on the monitor.

7-2-2. Character Display Confirmation (Menu Display)

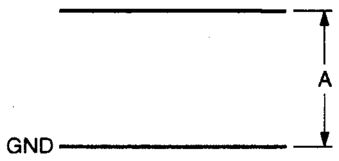
Conditions for adjustment	Spec.
Pattern box(100% white) Oscilloscope CH1 : 1 V/DIV CH2 : 5 V/DIV H : 5 ms/DIV TRIG : CH2	CH1 : CN2-14 pin CH2 : VD  A = 4.5 ± 0.3 V

※ Except for the confirmation described above, check in the service mode.

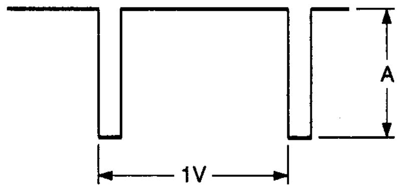
7-2-3. C TEMP Check

Conditions for adjustment	Spec.
Pattern box(100% white) Oscilloscope CH1 : 1 V/DIV CH2 : 5 V/DIV H : 5 ms/DIV TRIG : CH2	CH1 : CN2-9 pin  3200 K → A = 0.0 ± 0.3 V 5600 K → A = $5.0 ^{+0.3}_{-0.5}$ V

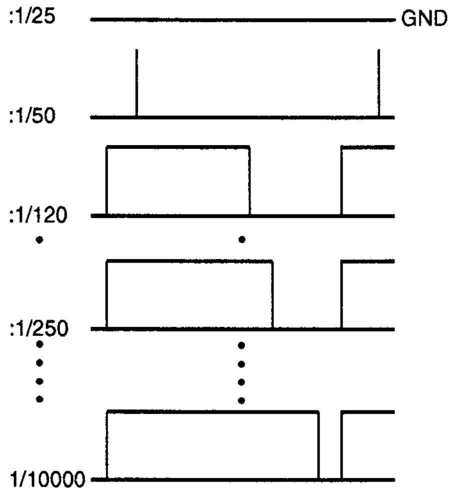
7-2-4. SENS Selection Check

Conditions for adjustment	Spec.
Pattern box(100% white) Oscilloscope CH1 : 1 V/DIV CH2 : 5 V/DIV H : 5 ms/DIV TRIG : CH2	CH1 : CN1-11 pin  MANUAL → A = 0.0 ± 0.3 V AUTO → A = $5.0 ^{+0.3}_{-0.5}$ V

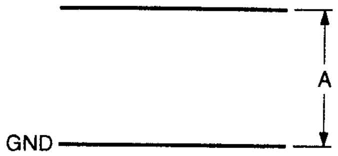
7-2-5. MANUAL SENS Check

Conditions for adjustment	Spec.
Pattern box(100% white) Oscilloscope CH1 : 1 V/DIV CH2 : 5/DIV H : 5 ms/DIV TRIG : CH2	CH1 : CN1-13 pin  0 db → A = 5.0 ± 0.2 V 18 db → A = 0.6 ± 0.2 V

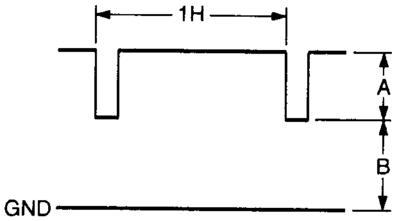
7-2-6. Electronic Shutter Check

Conditions for adjustment	Spec.
Pattern box(100% white) Oscilloscope CH1 : 10 V/DIV CH2 : 5 V/DIV H : 5 ms/DIV TRIG : CH2	CH1 : TG-133 board TP5(SUB G)  · The waveform on the oscilloscope must change when the shutter is switched.

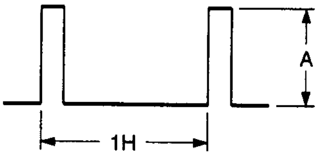
7-2-7. FRM/FLD Check

Conditions for adjustment	Spec.
Pattern box(100% white) Oscilloscope CH1 : 1 V/DIV CH2 : 5 V/DIV H : 5 ms/DIV TRIG : CH2	CH1 : CN-20 pin  FRM → A = $5.0^{+0.3}_{-0.5}$ V FLD → A = 0.0 ± 0.3 V

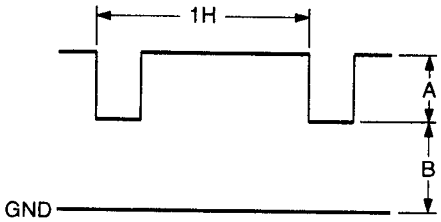
7-2-8. R BLACK + 127 Check

Conditions for adjustment	Spec.
Pattern box(100% white) Oscilloscope CH1 : 500 mV/DIV CH2 : 5 V/DIV H : 20 µs/DIV TRIG : CH2	CH1 : CN1-5 pin  A = 0.7 ± 0.2 V B = 2.5 ± 0.2 V

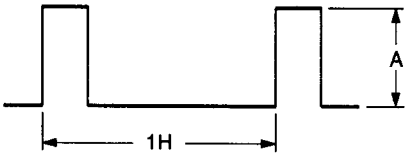
7-2-9. R BLACK − 127 Check

Conditions for adjustment	Spec.
Pattern box(100% white) Oscilloscope CH1 : 500 mV/DIV CH2 : 5 V/DIV H : 20 µs/DIV TRIG : CH2	CH1 : CN1-5 pin  A = 0.7 ± 0.2 V

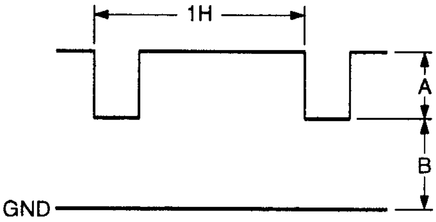
7-2-10. G BLACK + 127 Check

Conditions for adjustment	Spec.
Pattern box(100% white) Oscilloscope CH1 : 500 mV/DIV CH2 : 5 V/DIV H : 20 µs/DIV TRIG : CH2	CH1 : CN1-7 pin  A = 0.7 ± 0.2 V B = 2.5 ± 0.2 V

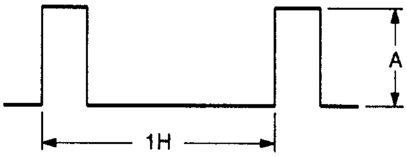
7-2-11. G BLACK − 127 Check

Conditions for adjustment	Spec.
Pattern box(100% white) Oscilloscope CH1 : 500m V/DIV CH2 : 5 V/DIV H : 20 µs/DIV TRIG : CH2	CH1 : CN1-7 pin  A = 0.7 ± 0.2 V

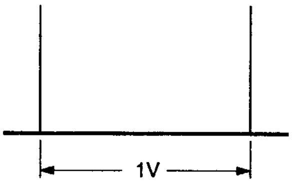
7-2-12. B BLACK + 127 Check

Conditions for adjustment	Spec.
Pattern box(100% white) Oscilloscope CH1 : 500 mV/DIV CH2 : 5 V/DIV H : 20 µs/DIV TRIG : CH2	CH1 : CN1-9 pin  A = 0.7 ± 0.2 V B = 2.5 ± 0.2 V

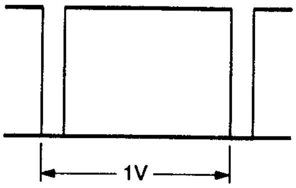
7-2-13. B BLACK − 127 Check

Conditions for adjustment	Spec.
Pattern box(100% white) Oscilloscope CH1 : 500 mV/DIV CH2 : 5 V/DIV H : 20 µs/DIV TRIG : CH2	CH1 : CN1-9 pin  A = 0.7 ± 0.2 V

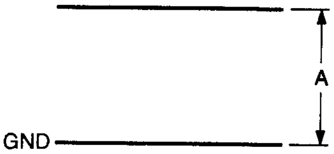
7-2-14. CCD IRIS 000 Check

Conditions for adjustment	Spec.
Pattern box(100% white) Oscilloscope CH1 : 10 V/DIV CH2 : 5 V/DIV H : 5 ms/DIV TRIG : CH2 *Close the iris.	CH1 : TG-133 board TP-5 

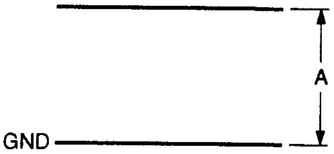
7-2-15. CCD IRIS + 255 Check

Conditions for adjustment	**Spec.**
Pattern box(100% white) Oscilloscope CH1 : 1 V/DIV CH2 : 5 V/DIV H : 5 ms/DIV TRIG : CH2 *Open the iris.	CH1 : TG-133 board TP-5 

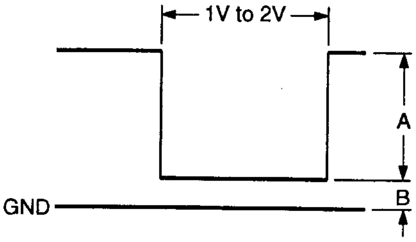
7-2-16. BARS Check

Conditions for adjustment	**Spec.**
Pattern box(100% white) Oscilloscope CH1 : 1 V/DIV CH2 : 5 V/DIV H : 5 ms/DIV TRIG : CH2	CH1 : CN2-12 pin *The menu on the monitor must disappear.  CB ON → A = 5.0 $^{+0.3}_{-0.5}$ V CB OFF → A = 0.0 ± 0.3 V

7-2-17. IRIS CLOSE Check

Conditions for adjustment	**Spec.**
Pattern box(100% white) Oscilloscope CH1 : 1 V/DIV CH2 : 5 V/DIV H : 5 ms/DIV TRIG : CH2	CH1 : CN2-12 pin *When a color-bar signal is displayed;  CB ON → A = 5.0 P $^{+0.3}_{-0.5}$ V CB OFF → A = 0.0 ± 0.3 V

7-2-18. HTSG Check

Conditions for adjustment	**Spec.**
Pattern box(100% white) Oscilloscope CH1 : 1 V/DIV CH2 : 5 V/DIV H : 10 ms/DIV TRIG : CH2	CH1 : CN1-21 pin  A = 5.0 $^{+0.3}_{-0.5}$ V B = 0.0 ± 0.3 V

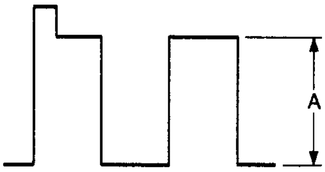
7-3. CAMERA BLOCK ADJUSTMENT(PR-188 BOARD)

- Preparation

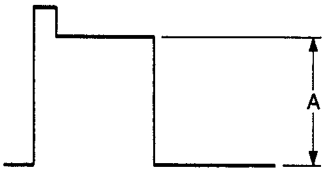
Subject	: Pattern box (100% white pattern), (gray scale A-6026-130-B), and (chart J-6026-100-A) and (chart J-6029-140-B)
Measurement equipment	: Oscilloscope and waveform monitor
Extension board	: J-6097-120-A (EX-329) and J-6097-110-A (EX-328)
	: Camera block and processor block

(1) Set the OPE/ADJ switch (SW1) on the AT-83 board to ADJ and turn on the processor power.
(2) Set the OPE/ADJ switch to OPE in the state of step (1) and press the "FUNC DOWN" switch on the rear panel. A color-bar signal is then displayed on the monitor.
(3) To adjust the EVR, set the OPE/ADJ switch to ADJ. To select the mode, set the switch to OPE.

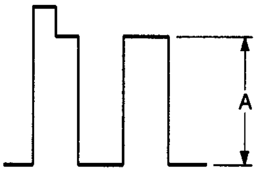
7-3-1. R.G.B Level Adjustment

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 200 mV/DIV H : 20 μs/DIV Mode : Color-bar	TP14(C-2) : G TP12(C-2) : R TP16(C-2) : B  A = 1.00 ± 0.01 V	⊘ RV9(C-1) : (G) ⊘ RV10(C-1) : (R) ⊘ RV8(C-1) : (B)

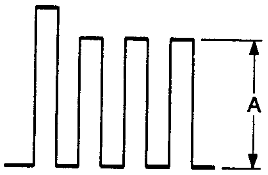
7-3-2. G-Channel Output Adjustment

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Color-bar(service mode)	 A = 700 ± 10 mV	⊘ RV5(B-2)

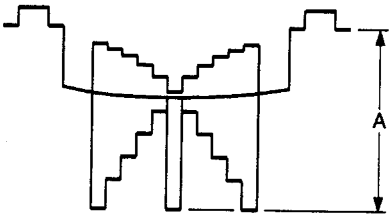
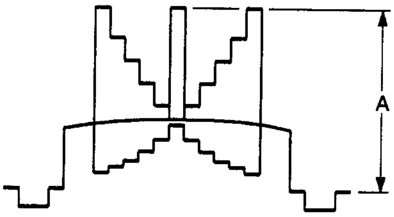
7-3-3. R-Channel Output Adjustment

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Color-bar(service mode)	 A = 700 ± 10 mV	⊘ RV4(B-2)

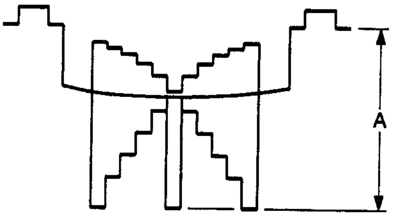
7-3-4. B-Channel Output Adjustment

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Color-bar(service mode)	 A = 700 ± 10 mV	⊘ RV6(A-2)

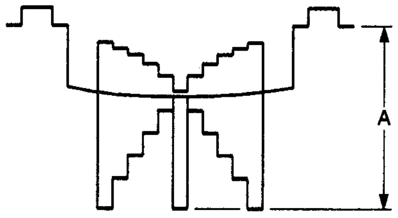
7-3-5. PRE AMP GAINAdjustment

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 50 mV/DIV H : 20 μs/DIV Mode : ADJ Iris data: 125 (f5.6) *Set in the open position.	PR-188 board G : TP4(A-1) R : TP2(A-1) B : TP6(A-1)  A = 260 ± 10 mV 0 dB setting: Only the waveform at TP8(A-1) is reversed.  A = 330 ± 15 mV	G : ⊘ RV2(A-2) R : ⊘ RV1(A-2) B : ⊘ RV3(A-2) EVR : No.12

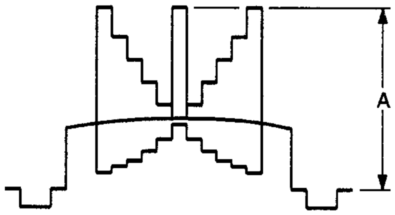
7-3-6. R AGC Input Adjustment

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 200 mV/DIV H : 20 μs/DIV C.TEMP : 5600K Iris : Open FRM/FLD : FLD	TP2(A-1) :  A = 1.00 ± 0.04 V	EVR : No.34 5600K Mode

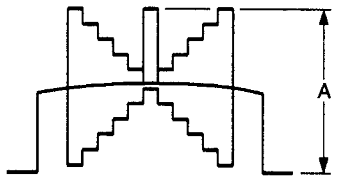
7-3-7. B AGC Input Adjustment

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 200 mV/DIV H : 20 µs/DIV C.TEMP : 3200K Iris : Open FRM/FLD : FLD	TP6(A-1) :  A = 1.00 ± 0.04 V	EVR : No.35 3200K Mode

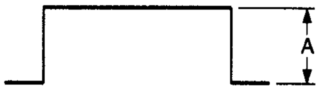
7-3-8. AGC Min Adjustment

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 50 mV/DIV H : 20 µs/DIV IRIS DATA : 125(F5.6) FLD/FRM : FRM	TP8(A-1): Just before the peak level increases  A = 330 ± 15 mV	EVR : No.10 3200K Mode * If the specified is not satisfied, readjust by EVR No. 12.

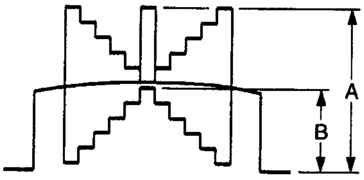
7-3-9. PR Output Adjustment(R.G.B)

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 200 mV/DIV H : 20 µs/DIV IRIS DATA : 125(F5.6) FLD/FRM : FRM	TP14(C-2) : G TP12(C-2) : R TP16(C-2) : B  A = 1.00 ± 0.02 V	EVR : No.13(G) : No.14(R) : No.15(B)

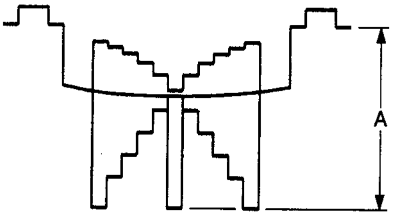
7-3-10. Pedestal Adjustment(R.G.B)

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 20 mV/DIV H : 20 µs/DIV Iris : Close M.PED : +10	TP14(C-2) : G TP12(C-2) : R TP16(C-2) : B  A = 30 ± 5 mV	EVR : No.20(G) : No.19(R) : No.21(B)

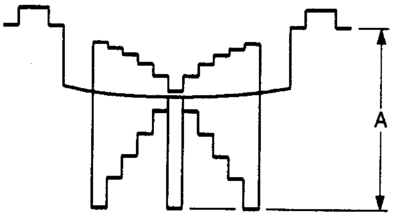
7-3-11. γ Adjustment

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 100 mV/DIV H : 20 μs/DIV M PED : +10	TP14(C-2) :  A = 1000 mV B = 515 ± 15 mV	EVR : No.22 * Adjust the level to specification A by an iris.

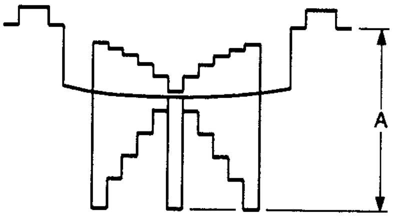
7-3-12. G PRE KNEE Adjustment

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 200 mV/DIV H : 20 μs/DIV Iris : F2.8 FLD/FRM : FLD	TP14(C-2) :  A = 1450 ± 30 mV	EVR : No.17

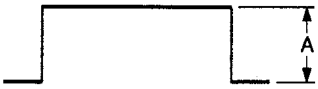
7-3-13. R PRE KNEE Adjustment

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 200 mV/DIV H : 20 μs/DIV Iris : F2.8 FRM/FLD : FLD	TP12(C-2) :  A = 1450 ± 30 mV	EVR : No.16

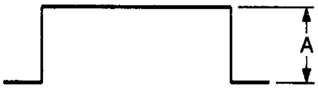
7-3-14. B PRE KNEE Adjustment

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 200 mV/DIV H : 20 μs/DIV Iris : F2.8 FRM/FLD : FLD	TP16(C-2) :  A = 1450 ± 30 mV	EVR : No.18

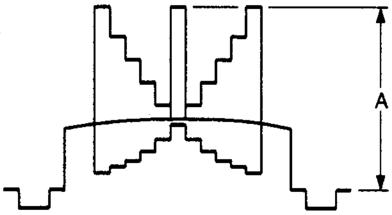
7-3-15. BLACK Adjustment(R.G.B)

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 20 mV/DIV H : 20 µs/DIV Iris : Close M.PED : + 10 FRM/FLD : FRM	TP14(C-2) : G TP12(C-2) : R TP16(C-2) : B  A = 30 ± 5 mV	EVR : No.2(G) : No.1(R) : No.3(B)

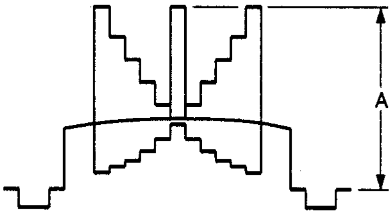
7-3-16. Pedestal Adjustment(R.G.B)

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 20 mV/DIV H : 20 µs/DIV Iris : Close M.PED : +10 FRM/FLD : FRM	TP14(C-2) : G TP12(C-2) : R TP16(C-2) : B  A = 30 ± 5 mV	EVR : No.20 : No.19 : No.21

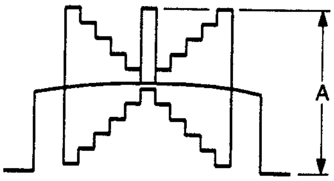
7-3-17. MAX GAIN Adjustment(1)

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 50 mV/DIV H : 20 µs/DIV SENS : +18 dB	TP8(A-1) :  A = 280 ± 7 mV	EVR : * Adjust the level to specification A by a lens iris.

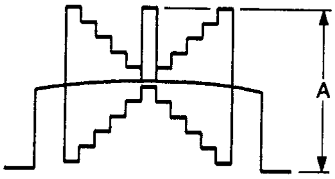
7-3-18. MAX GAIN Adjustment(2)

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 200 mV/DIV H : 20 µs/DIV SENS : AUTO Iris : F8	TP14(C-2) :  A = 315 ± 7 mV	EVR : No.9

7-3-19. AGC SET Adjustment

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 200 mV/DIV H : 20 µs/DIV SENS : AUTO	TP14(C-2) :  A = 900 ± 20 mV	EVR : No.11

7-3-20. CCD IRIS Adjustment

Conditions for adjustment	Spec.	Adjustment
Oscilloscope Pattern box CH1 : 200 mV/DIV H : 20 µs/DIV SENS : 00 SHUTTER : AUTO Iris : F4	TP14(C-2) :  A = 1050 ± 20 mV	EVR : No.32

7-3-21. Black Balance Circuit Correction

1. Set the OPE/ADJ switch on the AT-83 board to OPE.
2. Move the cursor to the 4/7[[BLACK]]BB CP item on the monitor.
3. Press the UP button to erase a menu. The menu is then displayed again.
   *Confirm that no alarm display appears.

7-4. PROCESSOR BLOCK ADJUSTMENT(ADA-33 BOARD)

- Preparation
  (1) Oscilloscope
  (2) Camera input conversion tool
  (3) Signal generator(TSG-300)
  (4) Extension board(J-6391-190-A) : J-6319-310-A
  (5) Frequency counter

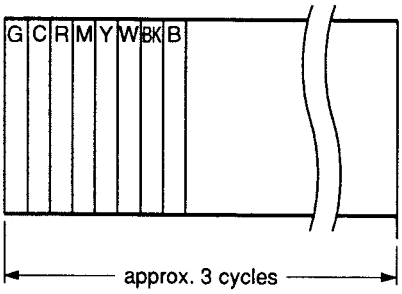
7-4-1. Power Supply Confirmation

*Digital + 5 V Check	: TP-1(B-7) GND : TP-E1(B-7)	+ 5 V ± 0.1 V
*Analog + 12 V Check	: TP-2(A-1) GND : E103(C-1)	+ 12 V ± 0.5 V
*Analog − 12 V Check	: TP-3(C-1) GND : E103(C-1)	− 12 V ± 0.5 V
*Analog + 5 V Check	: TP-4(B-1) GND : E103(C-1)	+ 5 V ± 0.2 V
*Analog − 9 V Check	: TP-5(C-1) GND : E103(C-1)	+ 9 V ± 0.5 V

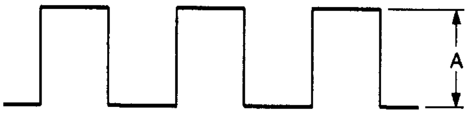
7-4-2. D/A Confirmation

· Set the switch (SW1) to LOCAL (OFF). (The cable complement is set to 10 m.)

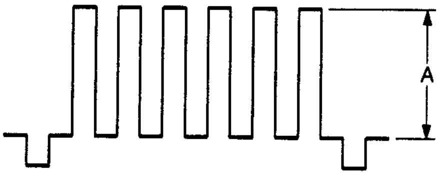
*Confirm that a color-bar signal is displayed on the monitor.



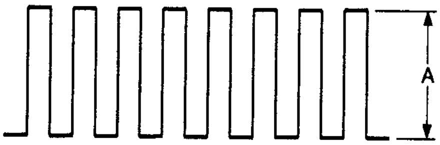
7-4-3. R D/A GAIN Adjustment

Conditions for adjustment	Spec.	Adjustment
S1 : LOCAL(OFF) S2 : BAR(ON) S6 : TEST(ON) Oscilloscope	R : TP108(A-3) GND : E102(B-3)  A = 1.4 ± 0.03 V p-p	⊘ RV104

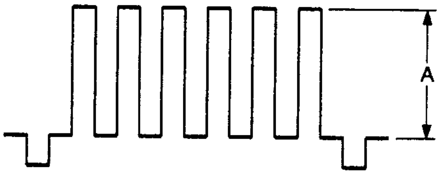
7-4-4. G D/A GAIN Adjustment

Conditions for adjustment	Spec.	Adjustment
S1 : LOCAL(OFF) S2 : BAR(ON) S6 : TEST(ON) Oscilloscope	G : TP208(A-3) GND : E202(B-3)  A = 1.4 ± 0.03 V p-p	⊘ RV204(B-3)

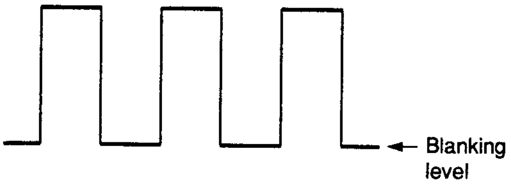
7-4-5. B D/A GAIN Adjustment

Conditions for adjustment	Spec.	Adjustment
S1 : LOCAL(OFF) S2 : BAR(ON) S6 : TEST(ON) Oscilloscope	B : TP308(A-2) GND : E302(B-3)  A = 1.4 ± 0.03 V p-p	⊘ RV304(B-2)

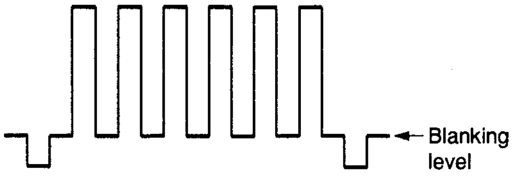
7-4-6. SYNC ON GREEN Adjustment

Conditions for adjustment	Spec.	Adjustment
S1 : LOCAL(OFF) S2 : BAR(ON) S6 : TEST(ON) Oscilloscope	G : TP208(A-3) GND : E202(B-3)  A = 600 ± 20 mV p-p	⊘ RV1(B-3)

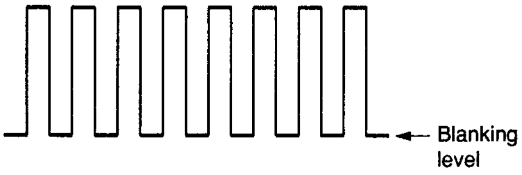
7-4-7. R D/A DC Level Adjustment

Conditions for adjustment	Spec.	Adjustment
S1 : LOCAL(OFF) S2 : BAR(ON) S6 : TEST(ON) Oscilloscope	R : TP108(A-3) GND : E102(B-3)  0 ± 20 mV DC	⊘ RV105(B-3)

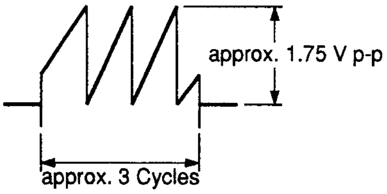
7-4-8. G D/A DC Level Adjustment

Conditions for adjustment	Spec.	Adjustment
S1 : LOCAL(OFF) S2 : BAR(ON) S6 : TEST(ON) Oscilloscope	G : TP208(A-3) GND : E202(B-3)  0 ± 20 mV DC	⊘ RV205(B-3)

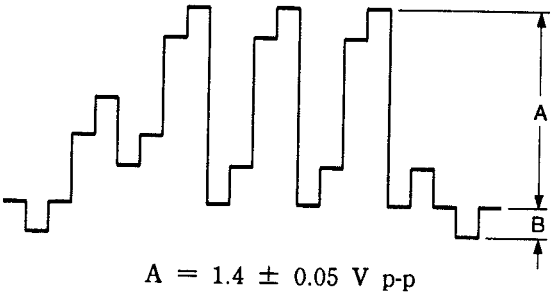
7-4-9. B D/A DC Level Adjustment

Conditions for adjustment	Spec.	Adjustment
S1 : LOCAL(OFF) S2 : BAR(ON) S6 : TEST(ON) Oscilloscope	B : TP308(A-2) GND : E302(B-3)  0 ± 20 mV DC	⊘ RV305(B-2)

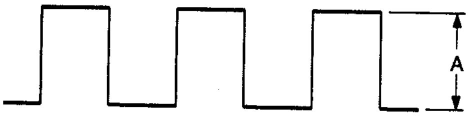
7-4-10. D/A Converter Output Check

Conditions for adjustment	Spec.	Adjustment
S1 : LOCAL(OFF) S2 : RAMP(OFF) S6 : TEST(ON) Oscilloscope * RAMP waveform is displayed on the monitor.	R : TP108(A-3) GND : E102(B-3) G : TP208(A-3) GND : E202(B-3) B : TP308(A-2) GND : E302(B-3) 	R, G, and B output waveforms must be normal.

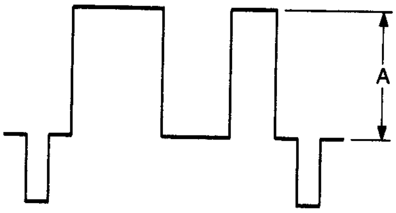
7-4-11. RETURN VIDEO GAIN Adjustment

Conditions for adjustment	Spec.	Adjustment
S1 : LOCAL(OFF) S2 : BAR(ON) S6 : TEST(ON) Oscilloscope * Color-bar signal is displayed on the monitor.	RETURN VIDEO : TP8(B-3) GND : E2(C-4)  A = 1.4 ± 0.05 V p-p B = 600 ± 20 mV p-p	A : ⊘ RV3(B-3) B : ⊘ RV2(B-3)

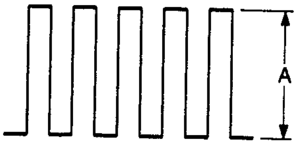
7-4-12. R A/D GAIN Adjustment

Conditions for adjustment	Spec.	Adjustment
S1 : AUTO(ON) S2 : BAR(ON) S6 : TEST(ON) Oscilloscope Camera input conversion tool TSG-300 (100% color-bar)	R : TP108(A-3) GND : E102(B-3)  A = 1.4 ± 0.05 V p-p	⊘ RV101(B-1)

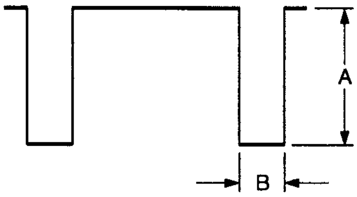
7-4-13. G A/D GAIN Adjustment

Conditions for adjustment	Spec.	Adjustment
S1 : AUTO(ON) S2 : BAR(ON) S6 : TEST(ON) Camera input conversion tool TSG-300 (100% color-bar)	G : TP208(A-3) GND : E202(B-3)  A = 1.4 ± 0.05 V p-p	⊘ RV201(B-2)

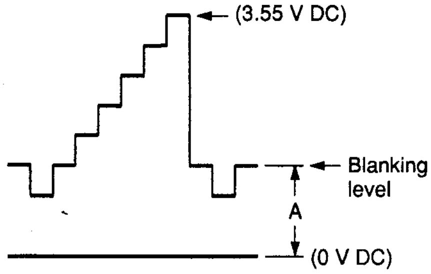
7-4-14. B A/D GAIN Adjustment

Conditions for adjustment	Spec.	Adjustment
S1 : AUTO(ON) S2 : BAR(ON) S6 : TEST(ON) Camera input conversion tool TSG-300 (100% color-bar)	B : TP308(A-2) GND : E302(B-3)  A = 1.4 ± 0.05 V p-p	⊘ RV301(B-2)

7-4-15. SYNC LEVEL Check

Conditions for adjustment	Spec.	Adjustment
S1 : AUTO(ON) S2 : BAR(ON) S6 : TEST(ON) Oscilloscope	SYNC OUT : TP14(B-4) GND : TP2(A-1)  A = 4.0 ± 0.2 V p-p B = 4.7 ± 0.15 μs	The output level must satisfy the specification.

7-4-16. Clamp Voltage Check

Conditions for adjustment	Spec.	Adjustment
S1 : AUTO(ON) S2 : BAR(ON) S6 : TEST(ON) Oscilloscope TSG-300 (5-step signal)	R : TP104(C-1) GND : E102(B-3) G : TP204(C-2) GND : E202(B-3) B : TP304(C-2) GND : E302(B-3)  A = 2.0 ± 0.05 V DC	The clamp voltage must be set to the specified voltage.

7-4-17. Cable Complement Operation Confirmation

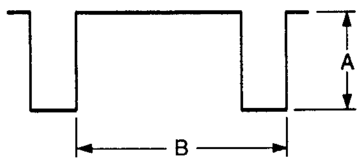
Conditions for adjustment	Spec.	Adjustment
Camera input conversion tool TSG-300: Multi-burst with Frequency-characteristic S1 : AUTO(ON) S2 : BAR(ON) S6 : TEST(ON) * Set the CABLE COMP switch to 10 m. Oscilloscope	R : TP103(B-1) GND : E102(B-3) G : TP203(B-2) GND : E202(B-3) B : TP303(B-2) GND : E302(B-3) In case of 10 m In case of 25 m	* The frequency characteristic must change when the CABLE COMP switch is selected from 10 m to 25 m.

7-5. PROCESSOR BLOCK ADJUSTMENT(SY-194 BOARD)

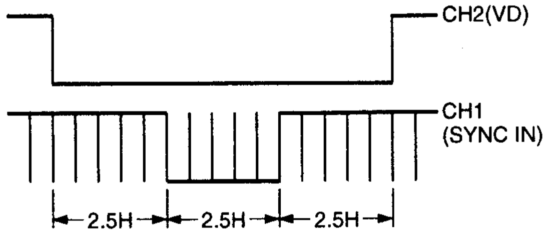
5-1. Free-Running Adjustment

Conditions for adjustment	Spec.	Adjustment
Frequency counter	TP2(C-1) : 28.375 MHz ± 50 Hz	⊘ RV1(B-1)

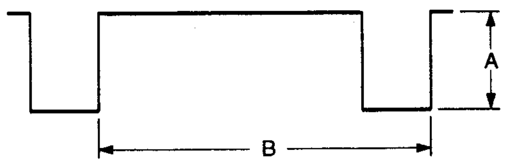
5-2. VD Signal Confirmation

Conditions for adjustment	Spec.	Adjustment
Oscilloscope CH1 : CN4 12D(Extension board) GND : D GND(Extension board)	 A = 5 ± 0.5 V p-p B = 20 ± 0.5 ms	

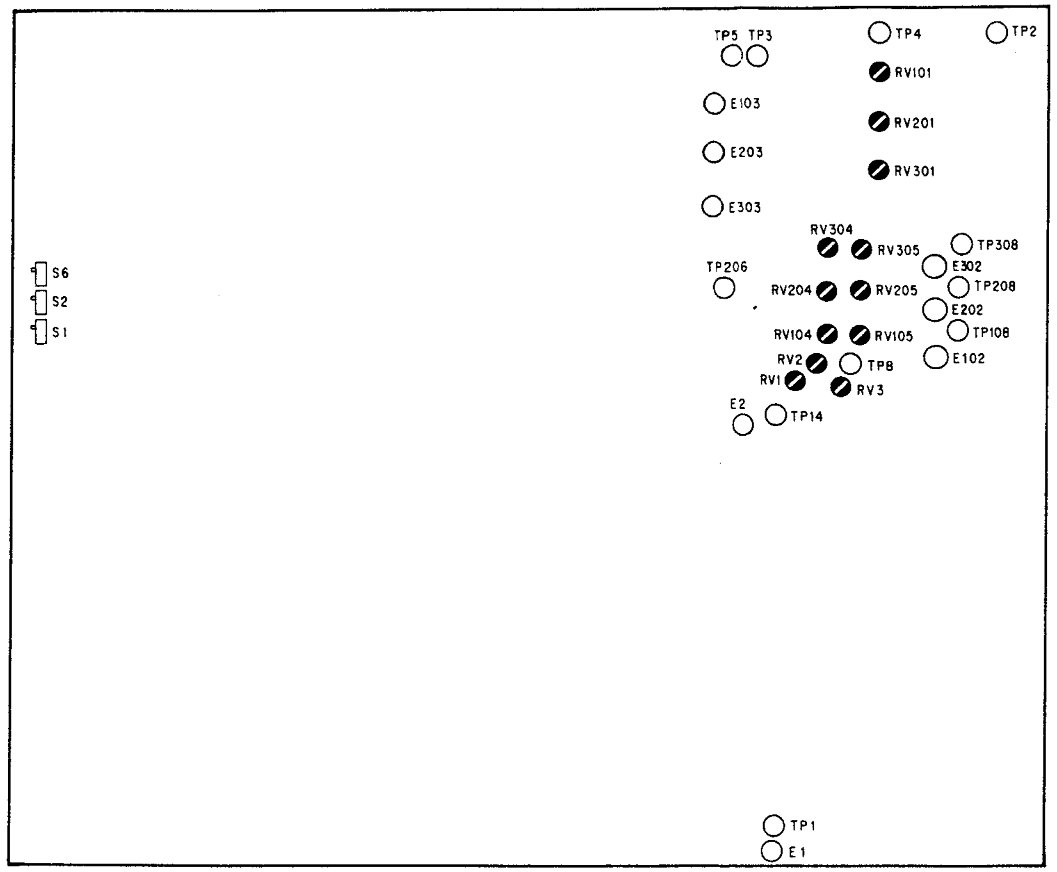
5-3. PLL Lock Confirmation

Conditions for adjustment	Spec.	Adjustment
Oscilloscope CH1 : CN4 2A(SYNC IN) GND : 2B(Extension board) CH2 : VD(Extension board)	* The SYNC IN signal must be locked to the VD pulse as shown in the figure.  CH2(VD) CH1 (SYNC IN) 2.5H 2.5H 2.5H	

7-5-4. HD Signal Confirmation

Conditions for adjustment	Spec.	Adjustment
Oscilloscope CH1 : CN4 12C(Extension board) GND : D GND(Extension board)	 A = 5.0 ± 0.5 V p-p B = 64.0 ± 0.1 µs	Pull out a CAMERA IN cable after portions A and B were confirmed. At that time, the waveform must not change.

7-6. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS


TP5
TP3
TP4
TP2
RV101
E103
RV201
E203
RV301
E303
RV304
RV305
TP308
E302
TP206
RV204
RV205
TP208
E202
S6
S2
S1
RV104
RV105
TP108
RV2
TP8
E102
RV1
RV3
E2
TP14
TP1
E1

ADA-33 Board(Component Side)

7-6. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

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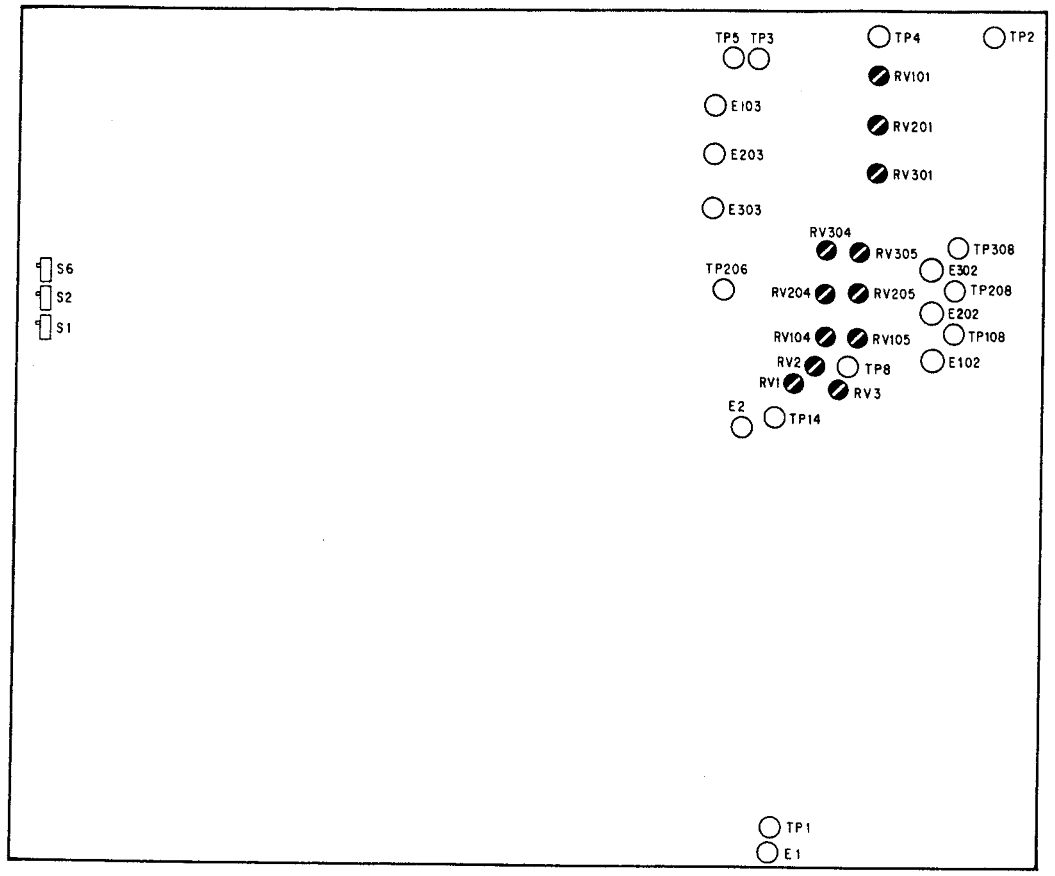
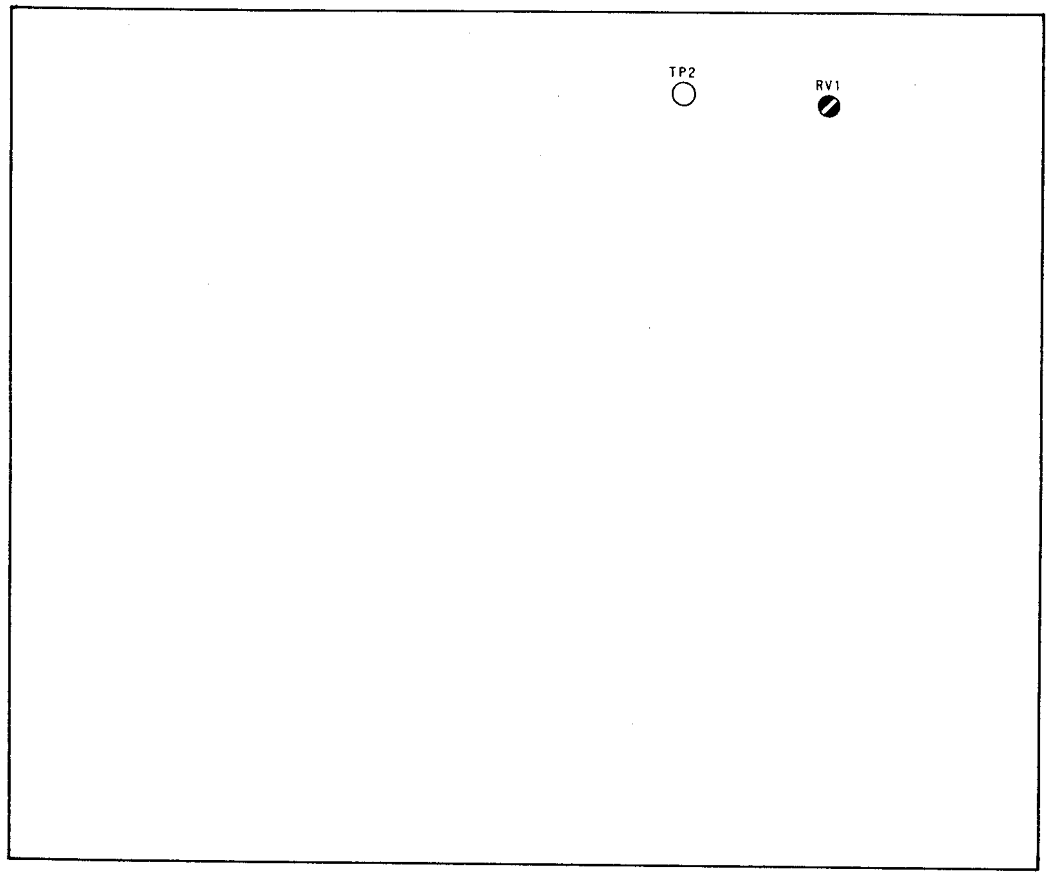
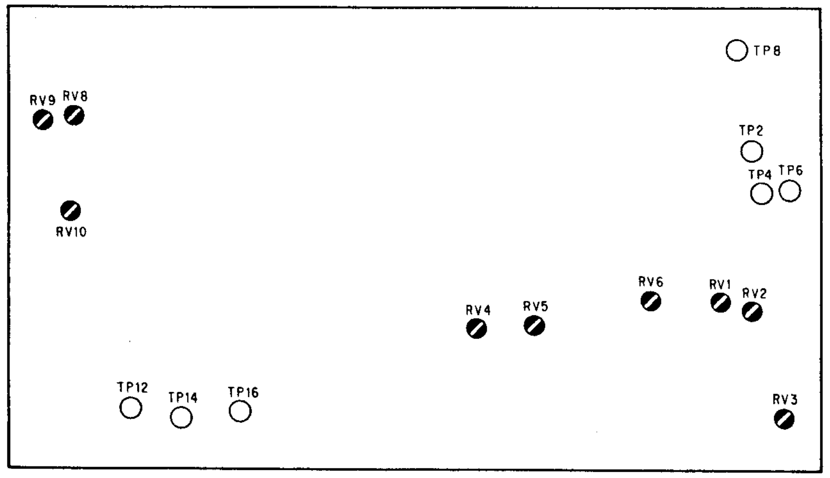
ERA IN cable
and B were
hat time, the
not change.


TP5
TP3
TP4
TP2
RV101
E103
RV201
E203
RV301
E303
RV304
RV305
TP308
E302
S6
S2
S1
TP206
RV204
RV205
TP208
E202
RV104
RV105
TP108
RV2
TP8
E102
RV1
RV3
E2
TP14
TP1
E1

ADA-33 Board(Component Side)



SY-194 Board(Component Side)


TP8
RV9
RV8
TP2
TP4
TP6
RV10
RV6
RV1
RV2
RV4
RV5
TP12
TP14
TP16
RV3

PR-188 Board(Soldering Side)